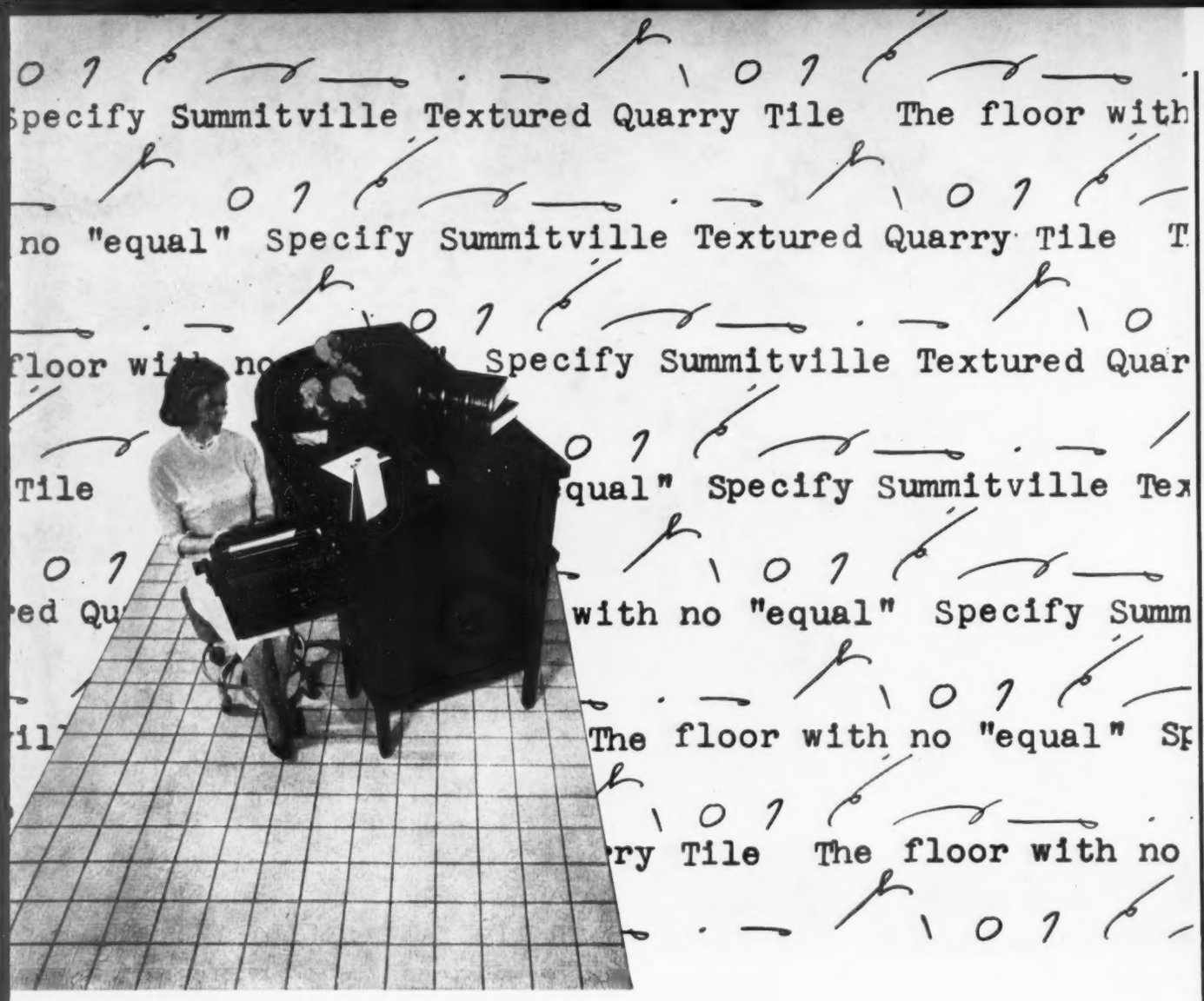
architectural & engineering NEWS

SEPTEMBER 1961 VOLUME 3 NUMBER 9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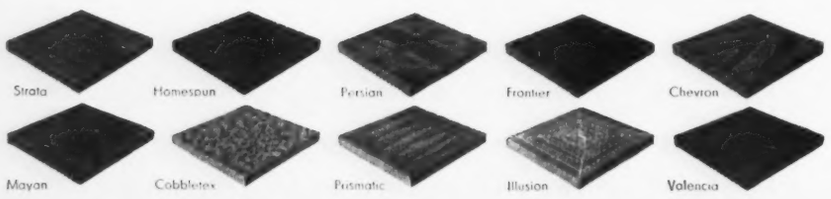

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BPA

architectural & engineering **NEWS**

EXIT

This month's special issue on ARCHITECTURAL INTERIORS set Art Director Tony Palladino to mulling over ideas for a suitable cover design. Some serious thinking on Tony's part ended with the revelation that the one tangible object which invariably distinguishes an architectural interior from an architectural exterior is the old and familiar EXIT sign. A series of feature articles devoted to interiors begins on page 12 with a thorough analysis, by an experienced consultant, of the elements determining design of the Corporate Interior.

←Circle 100 for further information

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GAZETTE

PHILIP WILL, JR FAIA, president of the AIA, was awarded an Honorary Fellowship in the Royal Architectural Institute of Canada. The award was made at the recent RAIC convention in Quebec.

JOHN C. BONEBRAKE AIA has been elected president of the Cleveland Chapter AIA, for the year 1961-62. Other new officers include: Edward A. Flynn AIA, vice president; John F. Lipaj, secretary; and Edward S. Crider, treasurer.

JOHN GIRAND, civil engineer, has been appointed to the Arizona State Board of Technical Registration. Girand will serve a three-year term.

IRA S. ROBBINS has been elected vice-chairman of the New York Housing Authority.

BENJAMIN M. GRUZEN AIA has been elected president of the Newark Chapter of the N. J. Society of Architects for the year 1961-62. Other officials named were: Eugene A. DeMartin AIA, first vice president; James G. Centanni AIA, second vice president; J. R. Kordys AIA, treasurer; and Joseph T. Gemmi AIA, secretary.

DAVID O. MEEKER, JR AIA has been granted a fellowship by the Danish government for a year's advanced study and research at the graduate school of the University of Denmark in Copenhagen.

SAMUEL T. HURST AIA has been appointed Dean of the School of Architecture at the University of Southern California. Hurst was formerly Dean of the School of Architecture and the Arts at Alabama's Auburn University.

MURRAY A. WILSON, a consulting engineer of Salina, Kansas, has been elected president of the National Society of Professional Engineers. Harvey F. Pierce, Thomas T. Mann and John H. Stufflebean were elected area vice presidents.

C. CARTER BROWN was recently elected president of the Gulf Institute of Consulting Engineers for the year 1961.

JAMES F. BRITTAIN was elected president at the 113th annual meeting of the Boston Society of Civil Engineers.

office announcements

LAUREN V. POHLMAN AIA and ROMAN N. CHAPELSKY announce formation of a partnership to continue the practice of architecture. Offices are at 1140 E. Jersey Street, Elizabeth, N.J.

WILLIAM E. COX has been appointed to the architectural design staff of the Ballinger Company, architects and engineers of Philadelphia.

MARTIN LOVETT PE, announces the relocation of his office to The Ar-

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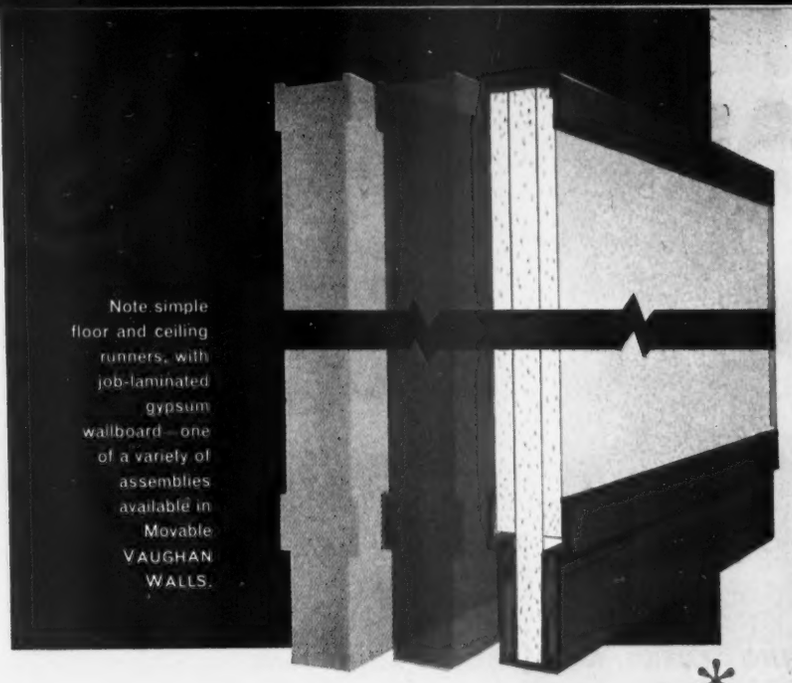

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GAZETTE

chitects Building, 101 Park Avenue, New York 17, New York. Mr. Lovett is a member of the technical advisory panel of A/E NEWS.

FEREYDOON GHAFFARI and SAMUEL TULCHINSKY were among four new associates recently appointed by Victor Gruen Associates, architects and engineers of Beverly Hills, California. The others are Joseph Belser and Victor Preston.

HAROLD D. HAUF AIA has been named vice president in charge of design and planning for Charles Luckman Associates, of Los Angeles and New York. Hauf is dean of the School of Architecture at Rensselaer Polytechnic Institute.

SLOCUM & FULLER, consulting engineering firm of New York City, announce the opening of a branch office in Sydney, New South Wales, Australia. The new office is in association with the Australian structural and civil engineering firm of Rankine & Rill, located at 40 Miller Street, North Sydney.

ROBERT A. MURPHY has become a partner in the Phoenix, Arizona, consulting engineering firm of Williams and Ellis.

J. PHILLIP HALL has joined the firm of Ragon & Valentine, consulting engineers. Their offices recently moved to Suite 305, Park Central Building, Memphis, Tennessee.

REED A. TROXEL has been admitted to partnership in the Syracuse, New York, consulting engineering firm of Stuart H. Snyder.

ELEANOR LARRABEE and ERIC J. PICK have been appointed associates of Warner, Burns, Toan, Lunde, architects.

CONSULTING ENGINEERS ASSOCIATION of California has relocated its offices to 1355 Market Street, San Francisco, California.

DENNIS C. SCHMIEDEKE AIA announces the formation of a new firm with Bradley R. Storrer AIA to be known as Schmiedeke & Storrer, Architects, with offices at 1800 Grindley Park, Dearborn, Michigan. Schmiedeke was formerly with the firm of Hawthorne & Schmiedeke, which has been dissolved.

GEORGE WAGSHALL ASSOCIATES, consulting engineers, announce the moving of their offices to 153 E. Elizabeth Street, Detroit, Michigan.

LEONARD H. GUSSOW, electrical engineer, has moved his offices to 153 E. Elizabeth Street, Detroit, Michigan.

ROBERT K. MOSS PE, announces the formation of a new consulting organization to be known as Robert K. Moss, consultants. The firm is located at 2252 Dehne Road, Northbrook, Illinois.

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FORECAST

THE FUTURE OF THE SHOPPING CENTER: AN ECONOMIC APPRAISAL

More so than most other building types, the shopping center relies to a large degree for its success on skillful design of its interiors, theme of this month's issue. The following report, based on a study in the Commerce Department's monthly Construction Review, *discusses shopping center construction prospects in the months ahead.*

Shopping center construction activities are moving at a rapid pace in most areas of the Nation. The popularity and apparent profitability of shopping centers is evidenced by the increasing number of new projects underway.

Many construction contractors who had previously not built shopping centers are moving into this field, and some of the larger ones are expanding and shifting their construction activities exclusively to shopping centers and associated mass housing.

The neighborhood store

Although not limited to suburban areas, shopping centers usually are located near heavy population concentrations on the outskirts of large cities. The typical modern center is a one-story, masonry project, and almost always provides adequate parking facilities. Providing for one-stop shopping and merchandising a great variety of products and services, it has weakened the competitive position of neighborhood stores.

According to the 22nd annual survey of *Chain Store Age*, chain stores will spend a new high of $1.594 billion in 1961 for construction, modernization, and equipment of stores. Chains are locating an increasing number of their new stores in shopping centers. More than 52 percent of their new stores will be built in shopping centers during 1961. This figure compares with 45 percent in 1960 and 48 percent in 1959.

Shopping centers are apparently accounting for upwards of two-thirds of construction work normally classified in the stores, restaurants, and garages category—according to McGraw-Hill's *Construction Daily Newsletter*. The bulk of expenditures for new shopping center construction seems to be taking place in three major areas—the South Atlantic, the Middle Atlantic, and the West South Central. These areas, in almost equal proportion, accounted for more than half of the value of new shopping centers planned or underway in early 1961.

Texas is first

The leading State in this type of construction work at the moment is Texas, accounting for almost one-sixth of the value of the new projects. Next in importance are Pennsylvania and Massachusetts, each with about one-tenth of the total. Four states—Ohio, Virginia, California, and New York—each account for from 5-10 per cent of the value of new projects.

It is interesting to note that Texas has been having an overall construction boom in 1961. Contract awards reported in *Construction Daily Newsletter* for January and February were running almost 50 per cent above the same months of 1960.

A few colossi

Although the relatively small shopping centers, costing less than $1 million, constitute the bulk of the new projects, super development projects are cropping up from coast to coast. In addition to providing conventional commercial facilities for shopping, these super developments usually include single-family dwellings, apartments, and office buildings. The construction of schools, recreational facilities, and industrial plants also take place as a part of the planning of new suburban communities which result from these super development projects. On the West Coast, a huge $750 million development is planned on 5,500 acres 3 miles south of Sacramento, California, to include some 20,000 houses, 70 acres of apartments, 77 acres of shopping centers, 14 school sites, and 650 acres of industrial plants. Another project, slated for North Bergen, New Jersey, is planned to include a $1 million pier, 20 26-story apartments, a theater, and a shopping center. The largest private undertaking in the history of Chicago is the planned 18-acre Illinois Center—a $150 million office, hotel, shopping center, and apartment development. The anticipated growth accompanying the completion of the Dulles International Airport near the Nation's capital has led to plans for a $30 million commercial development in that area.

Super development projects are not limited to private investment alone. The Hawaii State Legislature is considering plans for "Magic Island" on Ala Moana Reef, Honolulu. This $23 million development would include a public park, with a footbridge to the mainland, and sites would be sold or leased for a resort development, a shopping center, and a theater.

Sources of capital

Among private investors, real estate syndicates play a major role in shopping center construction. This type of organization has benefited from existing tax laws and has attracted a growing number of small investors, whose joint participation opens up new sources of capital for many types of construction. Even during the relatively tight money period of recent years, a serious shortage of funds to finance shopping center construction never seemed to occur.

The continuous buildup of proposed shopping center construction projects suggests that the present boom will continue well beyond the current year.

MAIL

Credit

TO THE EDITOR:

I very much appreciate the generous tribute given me in the NAMES feature of your July issue. It's always gratifying to be recognized, but to be listed in the illustrious company of those whose accomplishments you have reviewed in this column is a signal honor indeed.

I would take exception, though, to the implication that credit for the Metal Curtain Wall Manual belongs to any one individual. This is the result of the combined efforts of a number of interested and capable men in the National Association of Architectural Metal Manufacturers, and a number of other names should be mentioned when credits are given. I am pleased to have had a part in this work, but the book should be recognized as *NAAMM's* Manual not mine.

WAYNE F. KOPPES AIA
Basking Ridge, N.J.

The "other names" referred to in this letter are all agreed in conceding the major credit to Mr. Koppes.—Ed.

A matter of fact

TO THE EDITOR:

Your editorial in the August issue was marred by a misstatement of fact.

It was not an F-86 that crashed into the Empire State Building. The only plane that ever crashed into the Empire State Building was a B-25 Mitchell bomber piloted by an unfortunate Lt. Col. William F. Smith, Jr.

This crash occurred on July 28, 1945 and I remember it well because I had been in the building the day before. Needless to say I have not been back.

CLARENCE A. WINCHELL
New York City, N.Y.

Mr. Winchell is indeed correct. —Ed.

Kudos

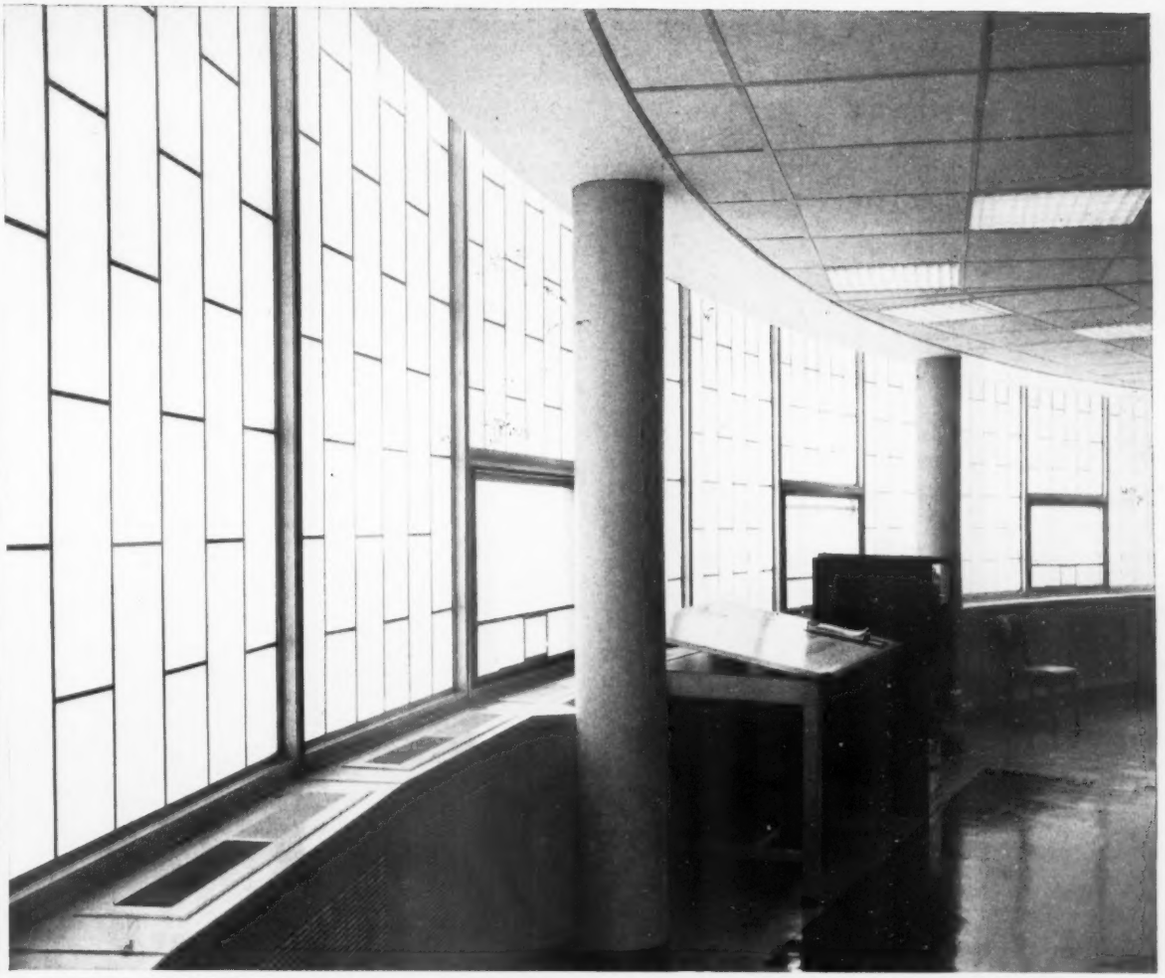
TO THE EDITOR:

I have been receiving your Architectural and Engineering News since its beginning. However since the July issue I have failed to receive my copy.

To say that I miss it would be the understatement of the year. I think it is the greatest publication for architects and engineers ever published.

I would appreciate receiving a copy of the August issue and please check to see if I am still on your list.

LOUIS KURTZ
New York, N.Y.



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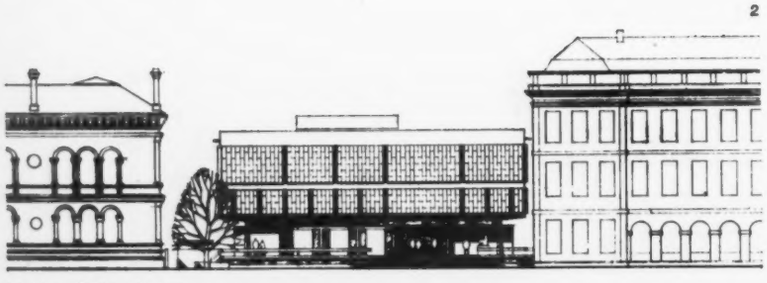
A|E NEWS



SOUTH ELEVATION

2

1. View shows new 32-story office building scheduled for construction on the site of a group of old buildings presently occupied by Morgan Guaranty Trust Company in downtown New York. Recently completed Chase Manhattan Building can be seen beyond. Architects are Skidmore, Owings and Merrill.
2. Elevation drawing shows winning design of University of Dublin Trinity College library competition. The winner, Paul G. Koralek, is an English architect who worked on the project while in New York as a designer with Marcel Breuer.

Eero Saarinen FAIA died on Friday, September 1st, at Ann Arbor, Michigan.

Saarinen, son of the Finnish pioneer architect Eliel, came to the U. S. at the age of 12, and after graduating from the Yale School of Architecture, he joined his father's practice.

He was known for his designs using new forms and new materials, designs which had a tremendous influence on architecture in the U. S. and abroad. He was 51.

Mural for Seattle Fair

A giant outdoor mural, reportedly the largest single work of art in the Pacific Northwest, will be unveiled at the 1962 Seattle World's Fair (For detailed report on Fair, see A/E NEWS, *Preview, January 1961.)*

Paul Horiuchi, one of the region's leading resident artists, has been commissioned to create the mural, which will be executed in ceramic or glass tile. It will be 60 feet long and 17 feet high. All work will be done under cover and the design will be revealed only at the opening of the Fair in April 1962.

The mural will be constructed and mounted in an architectural form designed by Paul Thiry, FAIA, primary architect, and located at the end of an open plaza adjacent to the United States Science Pavilion and the Space Needle, both key theme structures of the Fair.

Spotlight electricity at Fair

A $250,000 exhibit, by the electrical utility companies of the state of Washington, will feature electricity at the 1962 Seattle World's Fair.

A dam, with water rushing over spillways 40 feet high, will highlight the 7,500 square foot exhibit. In front of the dam will be a ramp, directing visitors past a series of animated displays depicting the past, present, and future of electricity.

From the ramp visitors will also be able to look down on a large relief map of the state of Washington floating in a pool of water. The exhibit will have buttons which can be pushed to activate parts of an electrical display on the map.

Monorail to serve Seattle Fair

Construction is rapidly progressing along Fifth Avenue in downtown Seattle on the nation's first commercial monorail system designed to serve a city.

The system is being built for the Alweg transit system and will carry passengers from downtown Seattle to the World's Fair. The system will cover 1.2 miles, with a traveling time of 90 seconds and a capacity of 10,000 passengers per hour.

Another monorail, suspension type, is being constructed for the Fair grounds and will service the various exhibits.

ASCE will view 1980 cities

A view of what the American city will be like in the next two decades will be projected in a series of papers to be presented at the annual convention of the American Society of Civil Engineers, October 16-20, at the Hotel Statler Hilton, New York.

"Metropolis—1980" will be the general theme of the convention, and 13 of the 14 technical divisions of the Society will participate by sponsoring 39 sessions at which about 150 papers will be presented, a majority of them related to the convention theme.

The Society's annual business meeting, at which 10 new officers will be inducted, will also be held at the convention. G. Brooks Earnest, of Cleveland, is the nominee for president. Balloting for the officers was held by mail this summer.

The City Planning Division of the Society has assumed a major role in the technical sessions by sponsoring two of them by itself and by participating with the Highway and Air Transport Divisions in joint meetings. Urban renewal and zoning will get prominent attention at these conferences.

The Structural Division is sponsoring a research session at which nine papers dealing with materials will be presented.

The 1961 prizes, awards and fellowships of the Society will also be given during the October meeting.

Oppose Welfare Island plan

The New York Chapter AIA announced that it is opposed to the recently advanced plan to use Welfare Island, in the East River, New York City, for a residential community. (A/E NEWS, *July 1961, page 6.*) The Chapter stated that "the island presents the final and foremost single opportunity to develop greatly needed open space and recreational sites for those living in the central area of New York City."

The Chapter's position was determined after a review by a special study group of its Civic Design Committee. The architects said that action should

be taken to insure that this public land is used to relieve the congestion in the city, particularly Manhattan, and provide the area with parks, playgrounds, and other leisure time facilities.

Pointing to the recreation acreage standard of 10 acres for each 1,000 of population, set by the National Recreation Association, the group noted that Manhattan at present has only 1.5 acres per 1,000 of population.

The New York group noted that the Federal Government's recently enacted housing legislation provides funds for cities to purchase land for future park use. This is nationwide recognition of the need for open space in urban areas, according to the group.

The cost to the city of purchasing an equivalent amount of land to relieve the shortage in Manhattan would run well over $100 million, the statement pointed out.

Richard Wagner will Address CEC

Richard Wagner, president of the United States Chamber of Commerce, will be featured speaker at the convention banquet of the Consulting Engineers Council convention on November 3 in Miami Beach.

Among the subjects to be covered at the convention are: the consultant's role in private enterprise, corporate practice for private engineering firms, division of responsibility between architects and engineers, introduction of new standard *Mechanical electrical special conditions* and standard accounting forms for use in private practice.

CEC committee reports on such matters as professional liability insurance, "free" engineering, manufacturers' catalog indexing system, fee schedules, "moonlighting" and engineer-contractor relations, will also be presented.

ASTM Becomes AST and M

The American Society for Testing Materials voted to change its name to American Society for Testing and Materials at its recent 64th annual meeting in Atlantic City.

The change points up the Society's interest in the nature of materials as well as the testing of them. The change is in line with formulation, last year, of a Division of Material Sciences to promote understanding in the basic nature of materials.

Architectural shows on the road

Among the road shows scheduled by the Museum of Modern Art, New York, for next year, will be four on architecture and design. They are *The Twentieth Century House, What Is Modern Architecture, Stairs,* and *Art Nouveau Graphics.*

The road schedule, which calls for twice as many shows as are planned for New York, will include more than 50 exhibits of original material, which will be seen by an estimated one million people at college and university museums, art associations and other educational units throughout the United States and Canada.

Urge unethical conduct penalties

At its recent annual meeting the National Society of Professional Engineers urged that specific disciplinary action be taken against engineers involved in construction scandals.

The Society's section for consulting engineers in private practice, in a report to the board of directors, pointed out that an investigation of the Interstate highway program, disclosed instances of improper conduct on the part of a few engineers.

The report urged state societies to "take prompt and vigorous action to enforce the ethical standards of the profession" and to inform the public of such action.

"Fallout" free lunches assured

The State of Oklahoma has ordered an underground cafeteria which will be installed in its Capitol office building. The cafeteria will be designed so that in the event of national emergency the $10 million project will also serve as a bomb shelter.

Fined for using 'Engineers' in name

A Washington, D.C., television repair firm was recently fined $60 for using the word "engineers" in its name, according to a report in the recent issue of the *CEC Newsletter.* The firm name, "TV Engineers, Inc.," was said to imply that the firm employs professional engineers in the television field when, in reality, only repairmen were employed.

The law, under which the company was convicted, is intended to keep the value of the title for professional engineers only, according to the Chief Investigator of the District's Department of Occupations and Professions.

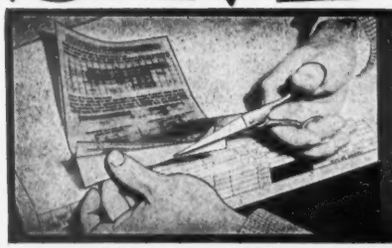
The U. S. Court of Appeals has denied an appeal of the verdict.

NYC begins urban renewal training

Nine young New York City residents began training recently in that city's first program for developing specialists in urban renewal and housing.

The nine, who include an insurance claims adjuster, a college instructor,

SAVE MONEY IN DRAFTING TIME . . .



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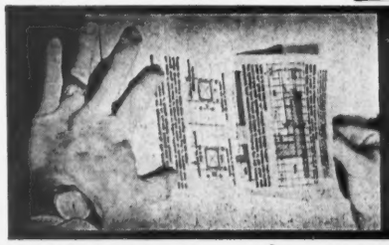

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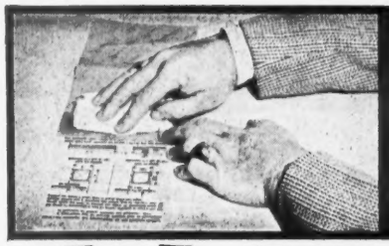

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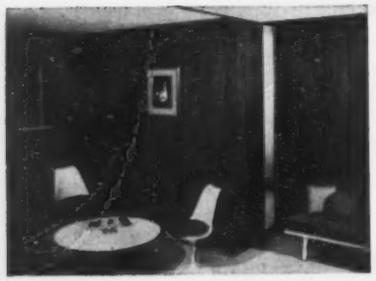

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a statistician, and a sociologist, were chosen from a list of 400 college graduates who submitted applications to the Department of Personnel.

The new plan, which consists of on-the-job training after a week of orientation, is designed to help the city meet the need for professionally trained personnel in urban renewal, relocation, and real estate management. It is modeled after the Federal HHFA Housing Intern program and is conducted with Federal aid to complement the program at the local level. The Federal Government pays two-thirds of the cost of the $41,000 program.

The group has been divided into four units, each of which will spend from one to eight weeks in each division of the Housing and Redevelopment Board of the City of New York. Staff sponsors have been assigned to each unit to give individual guidance to the trainee.

Building codes council organized

An Advisory Council on Building Codes has been formed to assist the U. S. Chamber of Commerce in presenting an accurate picture on code developments to the public. The Council is composed of representatives of architects, engineers, trade associations, and model code organizations.

The purpose of the Council is to report on progress being made on codes, to offer opinions on formulating, enacting and administrating codes, and interpreting code needs for the public.

Research on fire problems studied

A group of scientists and engineers from the United States and abroad recently conducted a one month study at Woods Hole, Mass. to evaluate the present status of fire problems, according to a report in *Building Science News*, newsletter of the Building Research Institute. The study was sponsored by the National Academy of Sciences, National Research Council Committee on Fire Research and by the National Science Foundation.

Prof. H. W. Emmons of Harvard was chairman of the committee.

Plan institute on contracts

The University of Wisconsin extension division, in cooperation with Region Seven of the Construction Specification Institute, will hold an institute on "Preparing Construction Contracts and Specifications" at the Madison campus of the university, on October 19 and 20.

The institute will feature lectures, by guest architects and engineers. Topics to be covered include contract documents, legal principles as applied to construction, bidding procedures, bonding of bidders, and insurance.

Inquiries concerning registration may be directed to Edward O. Busby, 3040 Stadium, University of Wisconsin, Extension Division, Madison 6, Wis.

Engineers' starting salaries up

A report from the office of placement and alumni relations of Illinois Institute of Technology indicates that starting salaries among its 1961 engineering graduates were approximately 5 per cent higher than the previous year.

The newly graduated engineer started working for an average salary of $550 a month in 1961, compared with $525 in 1960, with metallurgical engineers leading the field with an average of $590 in 1961, compared with $520 in 1960.

The income averages varied according to specialized fields. Electrical engineers received $566 this year, compared with $544 last year, mechanical engineers $537 against $520, and civil engineers $531 against $510.

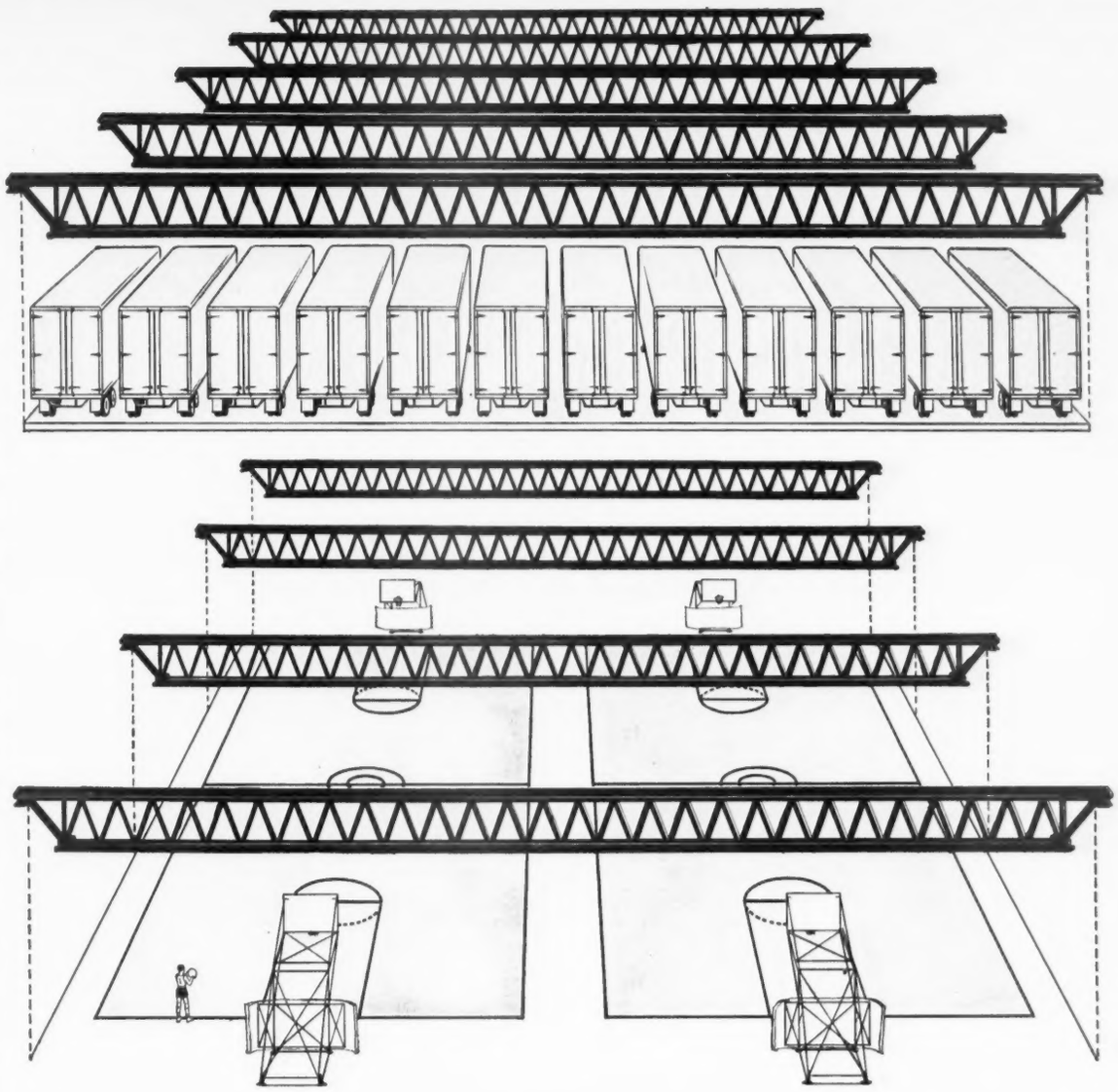
Madison Square Garden IV

The new Madison Square Garden Sports and Entertainment Center (A/E NEWS, *August 1961, page 12*) to be built over Penn Station, New York City, will comprise a new larger Madison Square Garden, an auxiliary arena and roof-top ice palace, a 28 story-750 room hotel, a 34 story commercial building with bowling center, and peripheral shopping areas. Construction costs are estimated at $75,000,000.

The nine acre site and air rights for the project, will be acquired from the Pennsylvania Railroad by the newly formed Madison Square Garden Center, Inc., on a long term lease and options totaling 99 years. Graham-Paige, owners of the present Madison Square Garden, will own 75 per cent of the company's stock and the railroad will own 25 per cent.

The principal structure of the center, the new Garden, will accommodate 25,000 people, in a total area of 2,347,000 square feet. Seating will be stadium type, with no balconies. Entrances to the seating area will be from mid-height, with customers going up or down from there to their seats.

A special swimming pool will be designed for rapid erection on the arena



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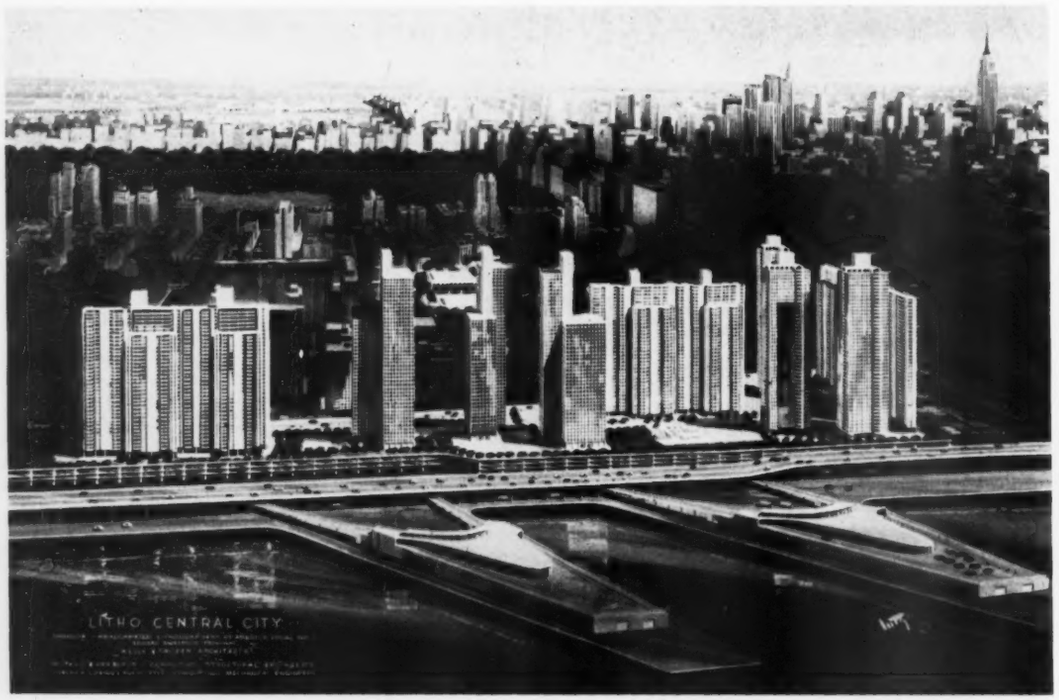
3. Recently completed Courthouse for Clark County, Las Vegas, Nev. includes the courthouse proper, jail facilities and a 200-car parking structure located at the rear of the property. Architects were Welton Becket in association with Zick and Sharp.



4. Rendering of Litho Central City shows apartment project to be built over New York Central railroad tracks on New York City's West side, directly to the west of Lincoln Center for the Performing Arts. Architects are Kelly and Gruzen. Structural and mechanical engineers are respectively DiStasio and Van Buren, and Joseph R. Loring and Associates.

floor to provide for aquacades, swimming and diving competitions, and exhibitions.

A supplementary arena, containing 4,000 seats, will be designed to house boxing, basketball, gymnastics, and similar events. It will also be convertible for use as a convention hall.

The commercial building will contain a bowling center, parking facilities, and office space.

The hotel will contain 750 rooms arranged on each side of a central tower core and corridor.

The ice palace will contain a league regulation size ice rink for practice use by the New York Rangers, as well as club rooms, lounges, and dressing rooms.

The plaza building, rising three stories above the street and covering the entire site, will contain the peripheral commercial areas and the service areas for the entire center.

A new passenger concourse will replace the two present ones. Clear ceiling height is to be 15 feet, with special lighting effects designed to give the appearance of greater height. Present concourse statuary will be re-used.

The entire project has been designed on the basis of the new New York City zoning resolution. Construction is expected to begin in about 12 months and will take approximately two years.

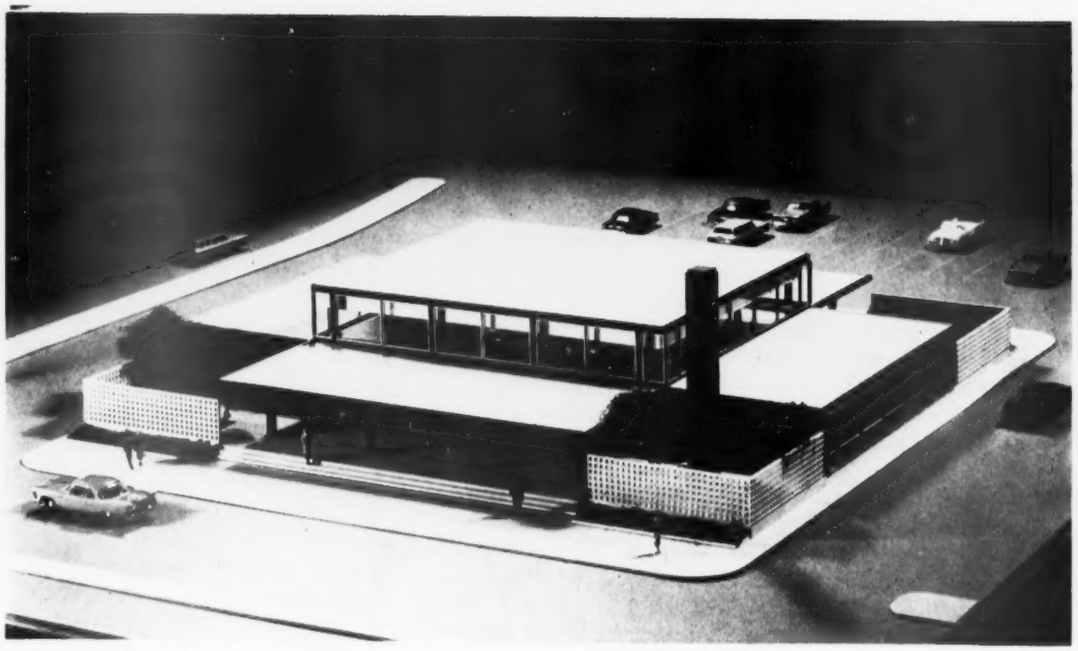
Ruberoid competition winners

Victor A. Cusak AIA, Ronald Meza, and James S. Moore AIA, of Beverly Hills, Calif., have been named winners of the $10,000 grand prize in the third annual architects' competition sponsored by the Mastic Tile Division of the Ruberoid Co. The theme of the competition was "Long range planning for the medical care facilities in the community."

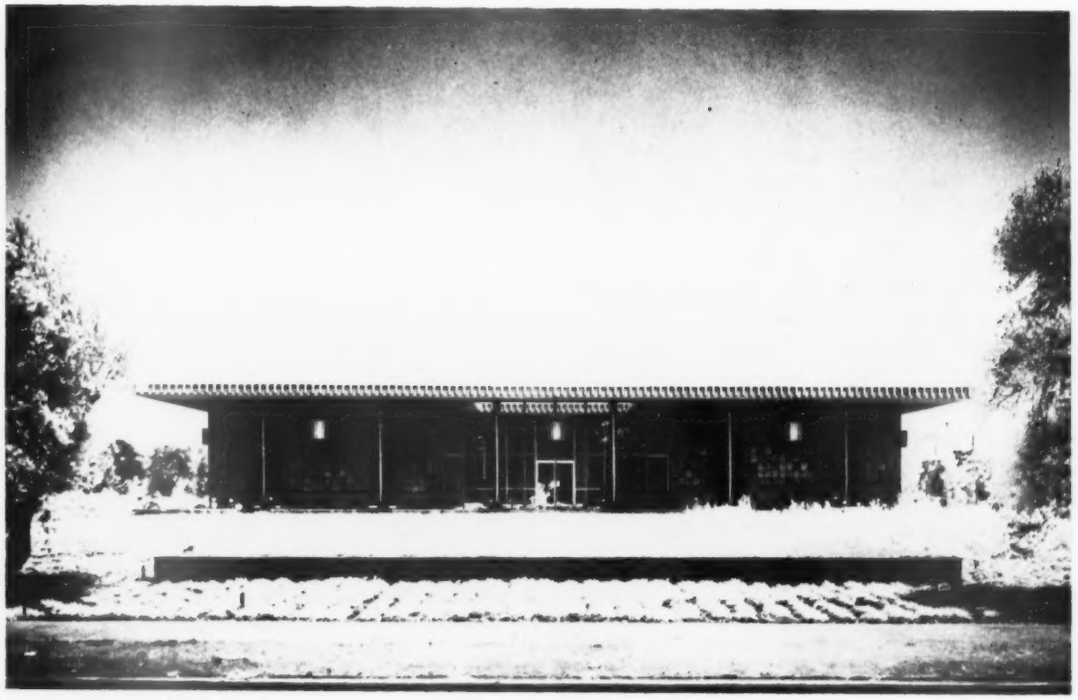
Prizes in the competition are divided into two categories, national and student. This year marks the first time that a national prize was won by a group of students.

In announcing its verdict the jury commented that the winning entry was "a well conceived and well balanced plan for hospital operation and economy of hospital construction, relating well to present services and those to be added in the future, and which expresses the suburban quality desired."

The second prize of $5,000 was awarded to the student team of James W. Bruza, James F. Knight, James S.



5. A new "expandable" branch bank building for Levittown, L.I. has been scheduled for construction this fall. Owner is the Williamsburgh Savings Bank. Architects are Frederick P. Wiedersum Associates.



6. Recently completed library for Santa Fe Springs, Calif. is the first building of a contemplated "town center," which will also include city offices, commercial, recreational and living facilities. Architects are William L. Pereira and Associates.

Daley, and William C. Watson, Jr., of Oklahoma State University.

The $2,500 third prize was awarded to John V. Sheoris AIA, of Detroit, William J. Johnson ASLA, and Clarence Roy ASLA, of Ann Arbor, Mich.

A second Oklahoma State University group won first prize in the special student category. The team consists of Alan B. Glass, Forrest L. Johns and David M. Griffin, who also received a $500 merit award in the national group.

The second student prize, of $1,000, was awarded to a third Oklahoma State University team, consisting of M. E. Gerardy and Richard W. Cramer, who were also winners of a $500 merit award in the national group.

Third prize of $500 was awarded to Donald Dommer and Gordon Kovell of North Dakota State University.

New lightweight aggregate

Lighter weights for bricks, structural tile and architectural terra cotta will be possible soon with use of a new lightweight aggregate called *SCR veri-lite*. In structural glazed facing tile, weight reductions of 17% to 18% have been cited.

The Structural Clay Products Research Foundation regards the new aggregate as "an important breakthrough" in their 6-year program of research in the field of lightweight clay products.

According to the foundation, the new aggregate, when added to regular clay, produces brick and tile which are significantly lighter in weight without losing the color and texture of traditional clay products. Satisfactory compressive strength is cited in the new production method.

In addition to lower construction costs, possible savings were noted in manufacturing and shipping of clay products using the new aggregate.

Mass production of clay products utilizing the new aggregate is expected shortly. The Foundation recently licensed Mapleton Development, Inc., to produce glazed facing tile units with the lightweight additive.

Correction

The 1961 Fall Conferences of the Building Research Institute will be held November 28-30 at the Mayflower Hotel, Washington, D.C. Dates and place of meeting were erroneously listed in last month's calendar of events.

designing the corporate interior

In 1861, there were no telephones, no typewriters, no other office machines; electric lighting was not yet invented; the transition from quill to steel writing pen had taken place, but the fountain pen was still 22 years away. Typical offices of the day were small, drab and colorless places with heavy furniture and bare wooden floors. Fluorescent lighting, air conditioning and acoustical ceilings were unheard of. This was the era of the stand-up bookkeeper's table, the roll-top desk and the green eyeshade.

The adding machine came along in 1872, the typewriter in 1873 and the comptometer in 1884. The telephone came into use starting in 1877 and electric lighting made its appearance about 1880. We may say, therefore, that the modern office was really born during this decade. As new inventions appeared, new techniques were developed for handling an ever increasing volume of office work. These changes called for new office arrangements, new types of furniture and storage units, new surroundings. Desks became engineered to perform various completely specialized functions in the arrangement and variety of storage, filing and mechanical facilities. Many new forms of record storage units are now available from the simple familiar four-drawer filing cabinet to highly developed automatic electric rotary and vertical filing systems.

Increasingly complex modern business has created the need for great diversity in office machines and supplies of all types, in records to be created, distributed and stored. We find, therefore, not only the typewriter, but multiple reproducing equipment calling for specialized installations, supply rooms and filing equipment, as well as diverse mechanical distribution systems, both tube and conveyor.

Electronic data processing equipment has experienced a phenomenal growth since its inception with current space problems in size, floor loading, electrical wiring and special air conditioning demanding detailed preplanning: Such areas frequently require structural floor reinforcement and often are best solved with a "floating floor" over an open free wiring area. Since many such units work on a two shift basis, separate air conditioning facilities with rigid humidity controls are required. This is an area of rapid growth and development in which planning requirenents are subject to constant change.

Technological and economic changes have in the last 100 years drastically altered the nature of the corporate interior, as the brief historical survey to the left clearly shows. The following article sets out in all their complexity the problems of designing the modern corporate interior. The article, whose author has 25 years of experience behind him, goes on to describe various approaches to solving these problems, not without cutting to size some quasi-sacred concepts, such as flexibility, privacy and modules.

by Sydney G. Rodgers*

With the expansion of modern industry, the ratio of office to industrial workers has steadily risen, and today, a corporate office headquarters may well occupy areas between 500,000 and a million square feet. Such areas will include not only private offices and general clerical space, but many specialized units. Conference and interviewing rooms, auditoriums and board rooms provide for group discussions. Special communication rooms cover the particular needs of telephones, intercom systems, wire and cable services. We find areas set aside for telephone dictation, for kitchen recipe formulation and testing, for television auditioning, for library study and reference. One design element which has been affected more than any other by this evolution is the interior dividing wall.

Walls—movable or fixed?

Many businesses find a constant need to change their office arrangements, to meet problems of growth or as an accompaniment to internal organizational changes. As a result movable partitions have largely supplanted the fixed plaster walls in modern structures, while folding walls, as soundproof as a plastered wall, are now available for the temporary subdivision of space. These flexible walls and dividers are, of course, more costly than plastered block partitions and since a large part of the office construction budget is represented by this item, one must be alert to the real significance of flexibility in each project.

An examination of a corporation's past experience in office alteration, and an evaluation of the benefits which may possibly have accrued if greater flexibility had been available, will provide the proper clue: movable partitions can cost two to two and one half times as much as plaster walls and therefore, from the sole standpoint of comparative cost, the *entire installation* must be taken down and relocated at least one and a half times in order to break even. Apart from cost, there are, of course, the important elements of speed, convenience and cleanliness on the side of the movable wall.

Creature comforts

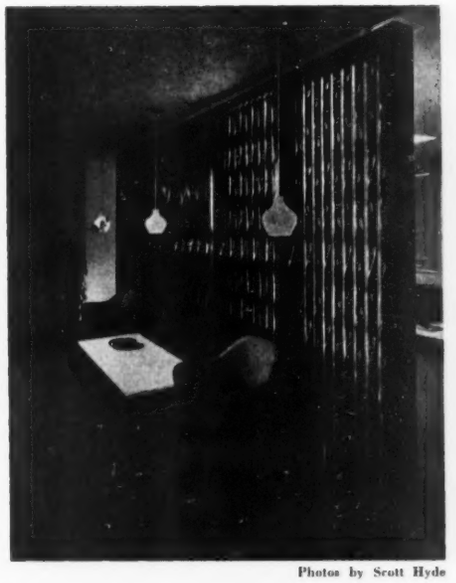
Since all these facilities are staffed by people, we find increasing provisions made for their comforts. In-office feeding may take the simplest form of vending machines; many offices include complete cafeterias and dining rooms, employee lounges, recreation rooms, rooms for employee organizations and complete medical departments with resident doctors and nurses. Powder rooms and rest rooms for female employees are standard practice. Suburban locations provide parking areas for employees' cars and may even include playing fields and a swimming pool.

Additional space, records and personnel are called on for various welfare programs such as group insurance, health, retirement and pension plans, employee stock purchase agreements and in-job training programs.

More and better footcandles

Recognition that the employee is a person whose work is directly affected by his personal well-being has made the corporate employer aware of the value of a suitable environment. Lighting is one of the most important factors. Today, the emphasis for general lighting is almost entirely on fluorescent units producing recommended levels of illumination between 50 and 100 footcandles at working plane level. The standards are constantly being revised upwards with 150 to 200 footcandles already urged by lighting research organizations. This is in contrast to 10 footcandles thirty years ago.

Equally important for comfort and efficiency are considerations of lighting quality: uniformity in distribution, freedom from glare, efficient diffusion, acceptable coloration, taste in



Photos by Scott Hyde

Photos show two sides of the same partition. Space is allowed to flow around this dividing element since total privacy is not required; nor is security a controlling factor. Screen separates personnel reception area (above) from principal reception area (below).

**Mr. Rodgers is head of Sydney G. Rodgers Associates, a prominent firm of interior space planners with headquarters in New York City. The author did his undergraduate work at Columbia University and holds a degree in architecture from Yale. He also attended the American School of Fine Arts at Fontainebleau. Rodgers Associates was founded in 1937.*

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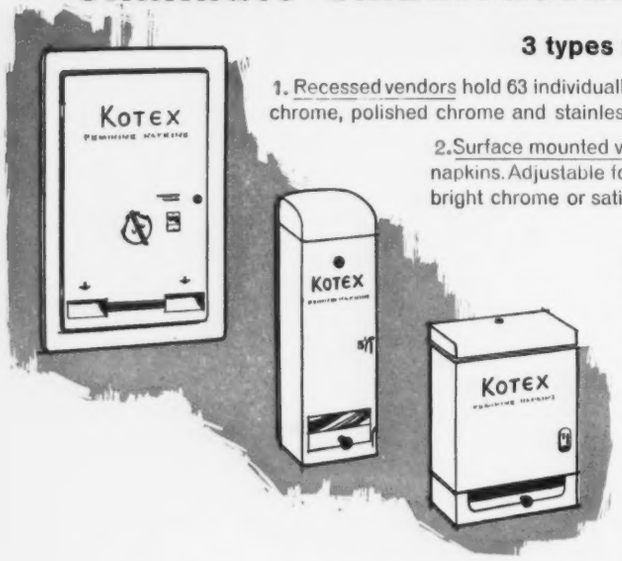

3 types to choose from!

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fixture design. And since most office lights burn all day, switches in general are beginning to be replaced by central panelboard controls on each floor.

Controlled air

Air conditioning, once a luxury, is fast becoming a standard feature in new buildings in many parts of the country. In such areas, the presence or lack of same has been found to have a definite bearing on a corporation's personnel problems.

The most suitable installation is the central plant, separately zoned for critical exposures and for interior spaces, with adequacy of controls for temperature adjustment within zones, and proper control of humidity, both summer and winter. Ducts and diffusers properly sized to prevent drafts, additional capacity and individual controls for all conference rooms, suitable exhausts for meeting rooms, pantries, etc.—these are all factors to consider. Also, privacy in certain rooms should be protected by replacing return air louvers with acoustically lined transfer ducts.

Quiet, please

There are two phases of the problem of sound control: that of absorption and *reduction* of sound within a room, and that of *transmission* of sound to other areas.

Sound reduction is generally accomplished by use of an acoustical ceiling and, in some cases, wall surfaces: these are supplemented by absorptive furnishing elements, such as carpeting, draperies and upholstery, and by the clothing of occupants. As a rule, an acoustical ceiling material having a noise reduction coefficient of 70 to 75% is satisfactory.*

It is quite possible also to overtreat an office acoustically as to cause unwanted conversations to be overheard at a considerable distance. In such cases, one may introduce a non-irritating "masking noise."

Transmission problems depend on the character of the partitions, where a factor in the range of 30 to 40 decibels represents current practice. Carrying partitions above and beyond hung ceilings as far as the structural

**This coefficient is an average of the rating for that material over the full range of frequencies of the normal office sounds. Where a sound absorption problem centering on some specific frequency is encountered, the material must be selected on the basis of its efficiency at that frequency.*

slab above, installing acoustical baffles in the peripheral air conditioning cabinets, thus continuing partitions outwards to the building walls, are both essential. These refinements, in conjunction with sound stripped doors and acoustical transfer ducts for return air, will provide adequate sound privacy for most office purposes. Doubling the enclosing partitions will not often be necessary except around mechanical equipment rooms. Heavy office machines should be set on vibration eliminators.

Flow of men and papers

With the increased complexity in the modern office, the relatively simple flow of work and traffic in the typical office of 1861 has become a compound pattern of criss-crossing lines of communication and distribution in a highly integrated organization. Many local straight-line work flow patterns may, however, be present within the complex and it is important that these be recognized and provided for in the planning. Proper location and arrangement of individual work stations in such units is essential.

Where critical paper flow is involved, as in sales order processing, one may well consider the value of slot conveyors to speed the work. Vertical conveyors for bulk movement of files and supplies have already found a place in multi-story office buildings. This function can best be served in the horizontal building by means of automatic direct station-to-station pneumatic tubes.

Both in support of individual work patterns and to serve the overall corporate office complex, efficient interoffice communication is essential. This may be provided through the main PBX switchboard, the calls being handled either by the regular telephone operators or automatically through machine switching, the latter being standard for most installations.

The latest development in metropolitan areas is the central automatic switching apparatus set up in an area serving one or more major buildings, and replacing the separate automatic equipment for all tenants in those buildings. Many companies, however, still prefer a privately owned intercom system, selecting a dial automatic type where complete coverage is required or a direct call key system serving about 24 stations. Key systems of this type may be used in particular sections (as within a department), even though another type may serve the interior as a whole.

Office highways and byways

Traffic of personnel and visitors within a corporate office needs a simple, well-studied pattern of circulation resulting from a careful organization of plan elements. Corridors under most building codes must not be less than 3′-8″ wide, but 4′-0″ should be taken as a minimum. Where length is considerable, where heavy traffic is anticipated or where special effects are desired, greater width is indicated.

It is well to bear in mind that corridors will seem wider under certain conditions. For example, a lower ceiling will enhance width. So will the extensive use of glass on one wall, particularly if it is clear glass. Painting walls in light receding colors increases apparent width, as will the use of different colors on opposing walls.

Long corridors are sometimes unavoidable and are best interrupted by various planning devices. One such device is elimination of one or both walls as the corridor passes by (or through) an area not requiring full privacy—as a general office unit or a secretarial bay. The lines of the aisle can be delineated by furniture arrangement, or in some cases by rows or files or space dividing panels carrying the color accent for that area. The secretarial gallery is another often used planning device in which a normal corridor's width is supplemented by a strip adjacent to—or opposite—a row of private offices. This strip contains the secretaries and equipment to serve those offices, so that a normal five foot corridor can become ten or eleven feet wide with no waste of space.

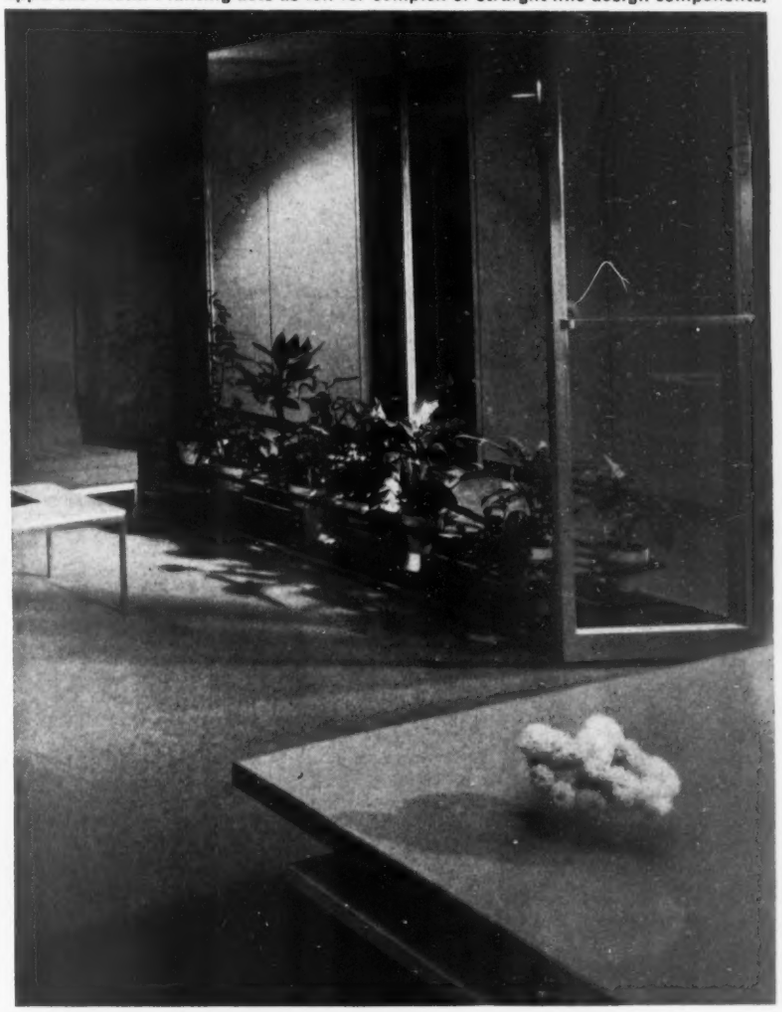
It is well to remember that corridor space is overhead amounting to fifteen to twenty per cent or more of the net usable areas and therefore must be carefully planned for efficiency. Total circulation will be greatest in offices with many small enclosed units, least in open plans with few partitions.

Where, however, full privacy, both oral and visual, is not essential, where security of contents or procedures is not required, or where impressions on a client or customer are not involved, much can be gained from free use of the open plan. It is important however, to analyze all factors in making such a choice, since not all types of office activity lend themselves to the open approach.

Photos by Scott Hyde

Individuality is attained (above) by use of movable accessories selected by occupant (figurines, cigarette lighter, ash-trays, planting). This principle can be extended to give the entire corporate interior a definite identifying personality.

View shows use of glass wall on one side of corridor as a technique for increasing apparent width. Planting acts as foil for complex of straight-line design components.



Resilient floors and indentation problems

Resiliency—the ability of a floor to provide underfoot comfort, quietness, and long wear—is a primary advantage of resilient floors. It is the reason why these floors do *not* indent, and also why they *do!* This seeming paradox is easily resolved. Under normal pressure from weight or impact, a resilient floor will "give" slightly and then, when the stress is relieved, will regain its normal surface. Under excessive pressure, the floor will give, but not return in full—and an indentation will result. Whether or not a floor is damaged depends on two factors: the nature of the pressure and the composition of the flooring material. When specific problems are anticipated in an interior from either static or dynamic loads, resilient floors that will not be damaged by the pressures involved can usually be chosen. The following offers suggestions on solving some of the more common indentation problems.

Preventing damage from static loads

Overcoming the effects of static loads is quite easy. The static load limits of all Armstrong floors are known. They vary from 25 psi for Asphalt Tile to 200 psi for Rubber Tile, Linotile, and for Custom Corlon and Castilian solid Vinyl Tiles. Since the probable weight of furniture or other heavy objects can usually be calculated, you have a guide to what type of floor would best meet the load requirements of an interior. You can also tell, by comparing the static load limits of the flooring material to be used with the weight of the furnishings, whether furniture rests—or other supports to distribute the loads—must be used. (As a double safety measure, furniture rests are recommended for use with all resilient floors.) Either by using a floor that has a load limit in excess of the weight to be placed on it, or by furniture rests, or by a combination of both methods, indentation damage from static loads will be prevented.

Preventing damage from dynamic loads

Dynamic loads include pressure from moving objects, such as furniture and heavy equipment being pushed across a floor, and from impact, such as heels striking the floor. Moving loads are not a real threat since a few common sense practices will prevent damage to resilient floors. The use of boards to cover the floor when moving heavy furniture, for instance, or the use of standard protective coverings on wheels and casters, will eliminate harm to the floor.

Floor damage from impact is frankly somewhat of a problem, since there are so many variables involved. One major problem is the current vogue for spike heels. Spike heels are the bane of all flooring materials. Whereas a 224-pound man wearing ordinary shoes exerts only 28 psi on a floor, a 105-pound woman wearing spike heels may exert a pressure of 2,000 psi when her heel strikes the floor! And if nailheads are protruding from her heel, the pressure can be as much as 60,000 psi! Such incredibly concentrated pressures are bound to affect resilient floors, just as they chew up wood, chip terrazzo, and snag and cut carpets.

Resilient floors do not act under these forces the same way they do under static loads. Oddly enough, research has indicated that the less resilient floors, such as asphalt tile or vinyl-asbestos tile, tend to resist heel impact better than many of the more resilient materials, such as rubber tile, linoleum, and Custom Corlon (homogeneous vinyl) Tile. This is because the high pressure is exerted for only a fraction of a second when the edge of a spike heel strikes the floor. A hard surface literally does not have time to indent. Some floors, however, have exceptionally high resistance to both static and dynamic loads. Armstrong Linotile, Tessera and Patrician sheet Vinyl Corlon, and the recently developed Castilian solid Vinyl Tile stand up extremely well in regard to the two types of loads. And these floors are recommended for heavy traffic areas where spike heels are apt to be a problem.

Here are four methods of minimizing the apparent damage to resilient floors from impact:

1) Make use of light, multi-colored, low-gloss floors. They reflect less light than dark, plain, shiny surfaces, and are less apt to show indentations.

2) Select patterns having swirl grainings, or terrazzo, mosaic, and spatter effects. The fine detail of such patterns visually obscures indentations.

3) Use floors with embossed textures, such as Armstrong Tessera and Patrician Corlon or Embossed Linoleum. The texture tends to camouflage indentations.

4) Recommend to building maintenance people that they not buff wax finishes, thus minimizing the shadows caused by indentations; suggest that at most the buffing be very light.

Special help for architects

Your Armstrong Architect-Builder Consultant can offer suggestions on choosing floors that will help overcome indentation problems. He can also get you further assistance from Armstrong research, decorating, and installation specialists. Call him at your Armstrong District Office. Or write direct to Armstrong, 1609 Ryman Street, Lancaster, Pennsylvania.

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Walls and privacy

Where enclosing partitions are elected, the choices offered include full height steel or plastered walls, intermediate height partitions at seven or eight feet, or five and a half to six feet, or five and a half to six foot bank screen units.

Such walls may be solid or glass for their full height, or a combination of solid and glass in varying arrangements. In today's fully illuminated offices, the use of glass in partitions to trasmit light is *passé*. We now use glass functionally only for one purpose: to see through. Where vision is not required, glass—both clear and obscure—is used generally for decorative effect and as a means of imparting a feeling of openness to space. It is thus very valuable when used in conjunction with interior offices to alleviate a shut-in feeling.

Many offices with partitions that stop short of the ceiling have been doing without doors, using only trimmed openings for access. In such open topped rooms, a closed door can only achieve partial privacy at best, and staff assigned to such offices rarely have need for complete privacy; furthermore, a full door, its hardware and its installation are fairly expensive construction items, and ones which are seldom brought into use.

The third dimension

The corporate interior must not in today's complex offices, aim merely for the most efficient subdivision of space, but should from the very beginning be developed as an *entity*. Every detailed arrangement must be visualized in its third dimension since, in its final aspect, furniture and equipment are an integral part of the architectural treatment. Groupings of such elements in contemporary work often serve as space dividers and thus become a primary design element. Isolated high equipment is well located against walls rather than in the midst of open areas; equipment layouts should be organized and grouped, and in many cases redesigned, for the sake of order and good appearance in the final installation.

These are not elements which can be handled at a later point in the program; they must be anticipated and provided for throughout the layout and planning phases.

The role of color

Stronger colors, used as accents against light, neutral, even white,

walls, are implicit in much contemporary work. Light colored vinyl and vinyl asbestos floors contribute through reflection to uniformity in lighting. In general the balance in color planning for work spaces should be on the low key side. Accents which cover the larger areas should be well grayed and the sharper accents held to small units.

Areas for short term occupany, such as lunch rooms, can be much more alive, offering a distinct change of pace at breaks and lunch hours.

Pots and plants

Today interior planting on a large scale has become an important decorative element. It may take the form of individual young trees in pottery containers or massed greenery in trough planters. These plants are used as integral parts of complete design units, frequently as space dividers and often with great skill and imagination. Used in this fashion, the free-form shapes of plant foliage contrast well with the precise and predominantly straight lines of the interiors.

The corporate personality

The best physical expression of the client's particular corporate personality is of course found in the arrangement and appearance of his offices. Overall unity of decor is essential. But within the framework of this concept, each executive private office can, and perhaps should, express the personality of the man who lives in it. Furniture, accessories, art and other outward forms of his personality are completely movable so that the relocation of such offices presents no real problem. By extending this principle, it is possible to give the *entire* corporate office an identifying personality.

Getting the facts

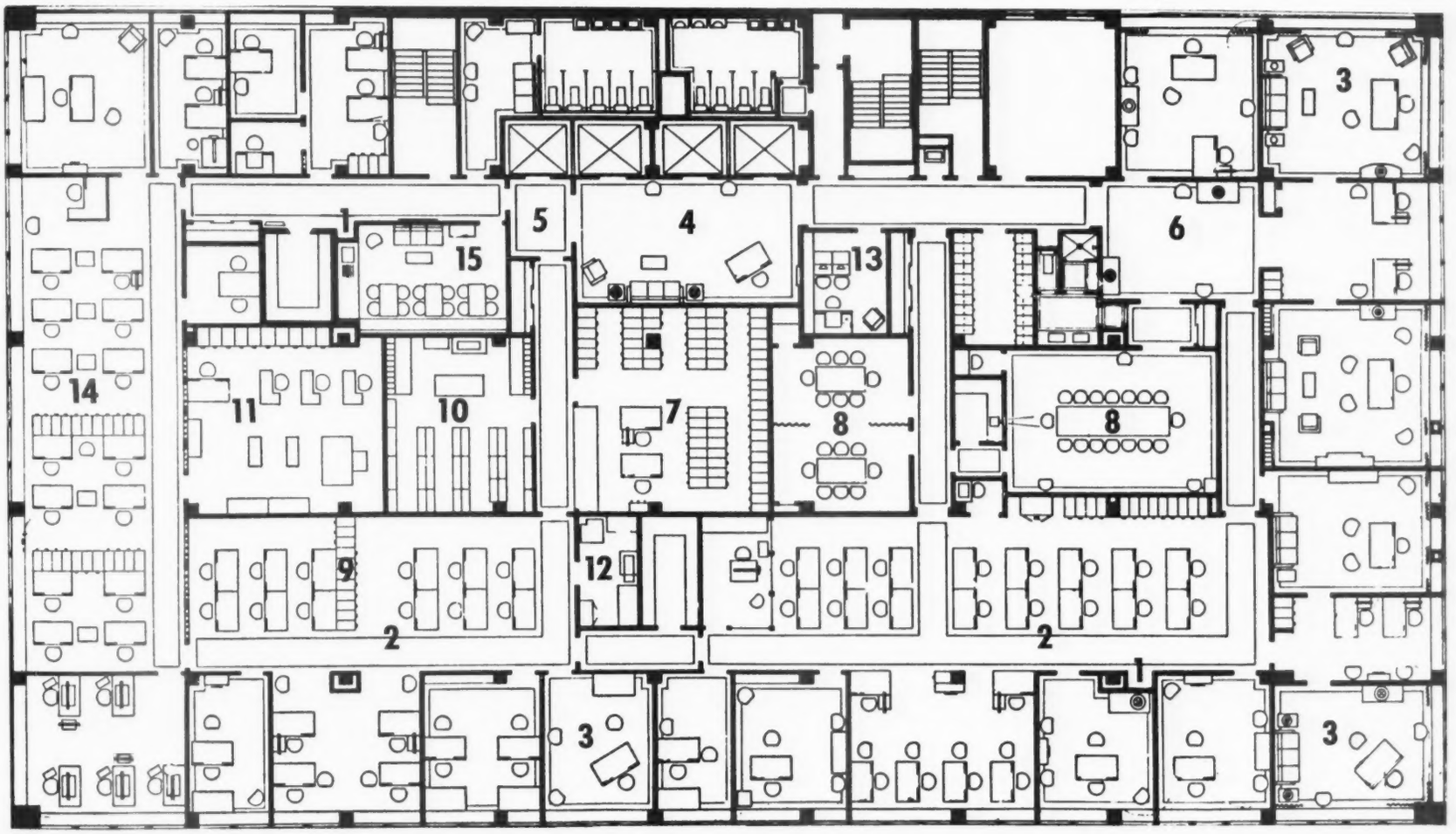
All these developments in the intricacy of the modern office have greatly complicated the job of the architect in planning commercial structures. To start with, the client rarely knows exactly how many feet of office space he will require, nor how to allocate the total by departments. But highly effective survey methods have been developed for the detailed analysis of a firm's space reqirements.

These methods include an intimate study of the firm's existing organizational structure, department by department, section by section, together with the office space in which these units are currently housed. Interviews are conducted both with top management and with individual department heads in which every aspect of present and future space requirements is discussed. This includes extent, size and assignment of private offices; open area "work stations" and their grouping into general office units; and specifications for special service areas — conference and reception rooms, mail and stock rooms, and the like. Along with this examination of physical space needs, the relationships between individuals, departments and divisions are studied to establish work and traffic flow patterns which will influence the location of these units.

Data is then analyzed and evaluated in terms of actual square feet of net usable space required. Totals are summarized by departments, showing the extent of windowed (peripheral) space desired, and indicating in each section the provision for future ex-

1 Recessed water cooler
2 Widebed secretarial corridor
3 Peripheral private offices
4 Reception lobby
5 Service lobby
6 Executive lobby
7 Filing
8 Conference Rooms
9 Files as space dividers
10 Mail, messengers, storage
11 Tabulating
12 Duplicating
13 Switchboard
14 Desk pool not requiring privacy
15 Employees' lounge and lunch room

Plan shows an actual floor plan modified to illustrate conditions described in the text. No scale. (Plan reproduced through courtesy of Management Publishing Group)



pansion. Such a survey and analysis are accompanied by a final report based on the tabulated figures and incorporating recommendations to assist in preliminary design work.

For the corporation planning to lease new space or to remodel, the survey and analysis are conducted along similar lines, subject to any limiting factors. In such projects, the survey establishes optimum standards against which various possible solutions in terms of leased or altered space may be measured.

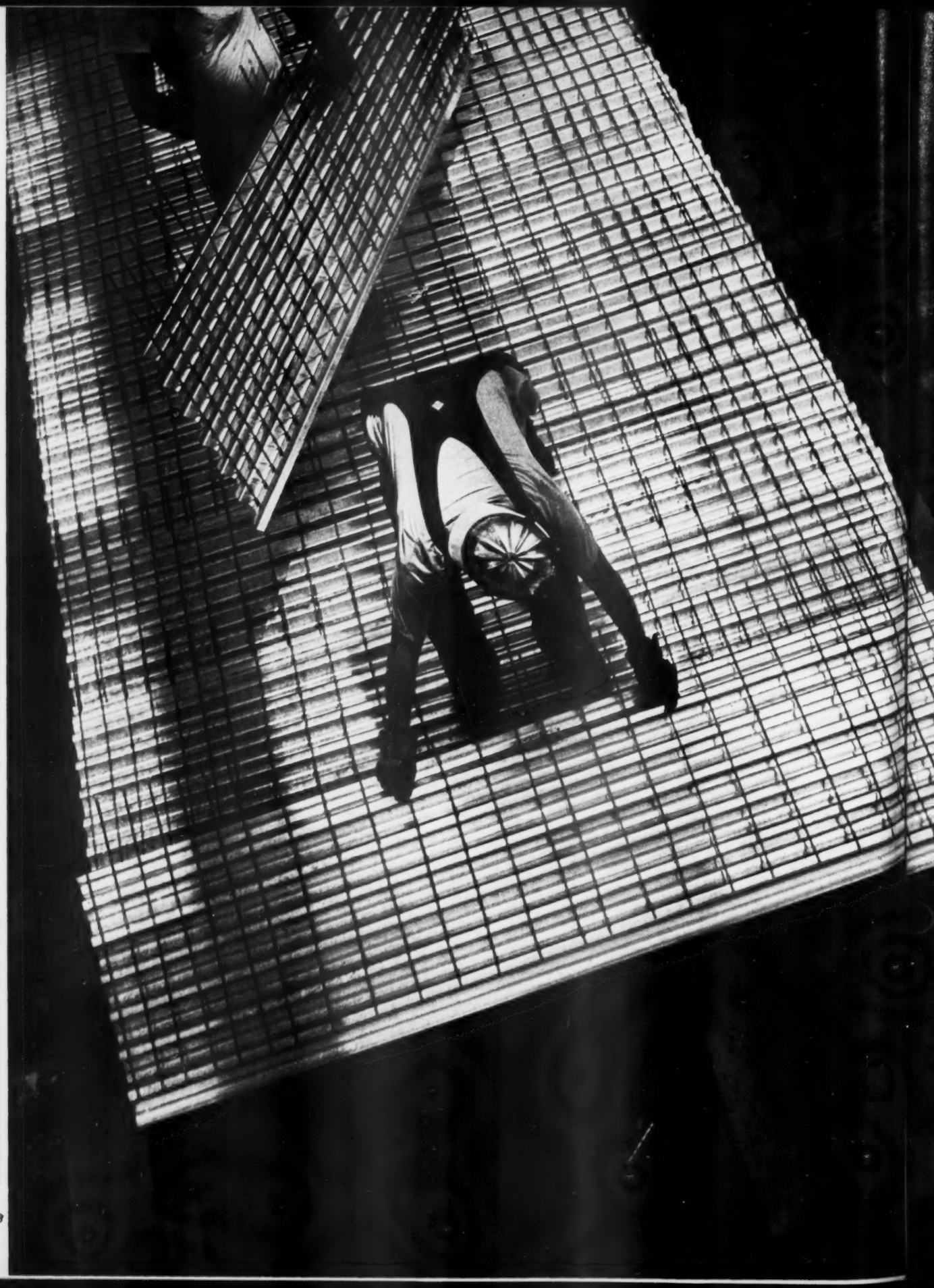
The module: theory and practice

In many buildings a modular format is used. At its simplest a module may consist merely of a uniform spacing of windows. In a more complete sense, it calls for two directional spacing along the entire floor, dividing the area into modular squares whose linear dimension represents the best possible choice for a given project. While many of the factors leading to such a choice—i.e., lighting, air conditioning, ceiling tiles, etc.—relatively fixed in any given period, other equally important factors relate to details of space utilization and, as such, vary with the requirements of individual clients.

One of the most critical is the ability of the module to produce the desired range of private office sizes, particularly where continuous strip fenestration is employed. For example, a typical office requirement might call for a range of four categories of offices, the smallest capable of accommodating two secretaries or junior staff men, the largest being less than 400 square feet in area.

The choice of modular size must first focus on the smallest—say *D*—office, and its detailed equipment requirements. Since this, in most cases, will be a two-module office in width, the *C*, *B* and *A* offices will then be three, four and five units wide. The areas will be controlled by the modular depth of the offices from the peripheral wall, usually a three unit dimension. Thus, if the *D* office is dimensioned too generously, the resulting *A* office will be much too big.

Where a wide range of office sizes is desired, and particularly where the scale of sizes is to be moderate, a small module, say four to four and one half feet, may be the best answer. Experience shows that the best module for average conditions is about five feet; and although even this unit has some shortcomings, it represents the best compromise for most work. Mod-



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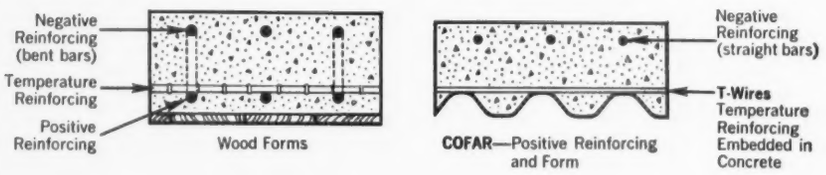

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ules as wide as six feet, while not suited to many projects, can nevertheless be used where there is to be a fairly small number of private offices and where a minimum of sizes can be selected, basically 12'x12' and 12'x18'.

Where should the modular approach be employed? Certainly not for the speculative office building for general rental, since the final tenants are quite likely to have widely varying space requirements leading to differing modular dimensions. For such buildings, planning should be limited to modular fenestration with a width of approximately four and a half feet. Since such buildings are predominantly urban, lot line dimensions will affect the exact expression of the module.

Owner occupied

The modular concept finds its most practical application in the owner-occupied office building, involving long range economy and flexibility of alteration. Used in such a building, in conjunction with movable partitions and completely coordinated details for all interior elements, office changes can be made speedily and cheaply with a minimum of dirt and disturbance. In such cases, each module is a completely integrated unit of space with lighting, electrical and air conditioning distribution and acoustical treatment fully coordinated. All partition panels conform to the module and can thus be moved anywhere without field cutting. For the ultimate in flexibility, electric wiring is run entirely in underfloor ducts or cellular floor construction.

Modular planning can be efficient and, in the long term view, very economical but it can fail to pay off if a corporation's need for frequent office revision is not such as to take full advantage of the system's potential. Where changes are few and far between, semi-permanent walls of plastered gypsum block, arranged without a module, can be cheaper. This sort of layout can display a great deal more "personality," avoiding the overstandardized, regimented appearance sometimes associated with the modular method.

Whichever the approach, office planning, like planning in other fields, must not be left to the mercy of a haphazard procedure. Preplanning is essential, with step by step consideration of all aspects, with infinite attention to detail, and close reference to the client's specific needs.

ARCHITECT INTERIOR DESIGNER

ARCHITECT—INTERIOR DESIGNER COLLABORATION IN THE SMALL TO MEDIUM SIZED ARCHITECTURAL OFFICE

An A/E NEWS staff report

While the schism between the architect and the interior designer is far from healed, signs are that both sides are showing an increasingly constructive attitude towards collaboration between the two fields. To be sure, extreme opinions still prevail, and the philosophies of architects and interior designers vary from the "this is entirely my bailiwick so stay out" approach to the view that each is a master in his field.

Specific office practice in terms of collaboration on projects involving large amounts of interior design likewise varies: there are about as many approaches as there are architectural offices, but these are easily grouped into three or four trends.

This much—and more—is clear from the results of a recent special A/E NEWS survey of selected small to medium sized architectural offices in all parts of the country, and of several outstanding personalities in the interior design field.

This survey revealed in its main lines that architects prefer to keep hold of the reins, but there was a wide diversity of views on reasons and methods. Typical was a comment by Donald Hanson, from the Hugh Stubbins office:—"We have no intention of invading the realm of or competing with interior designers, but we feel most strongly that the work of interior designers is work that must be coordinated by the architect, because their work is the polish of a project and not the basic expression. Thus the architect must, or should, maintain strong controls and close cooperation with the designer to insure—first of all—the proper communication of the expressed theme, as well as supervision over the execution of his work."

Phelps Bultman AIA, of Columbia, S.C. favors the status of the interior designer as a consultant to the architect, with final control resting with him (the architect). In his experience, collaboration with the interior designer has been excellent so long as he has had a say in who is picked.

Some replies placed less stress on architect control than on identity of design thinking, particularly if the owner has some say in the selection. A designer should be chosen having the same design aesthetic as the architect, to minimize design conflicts between the two, according to Don Carpenter, of Charlottesville, Va., who explains that "an extremely contemporary designer should not be teamed with an architect specializing in traditional or colonial designs, regardless of the exceptional ability and reputation of each." The *vice versa* of this is equally valid, of course.

Inside and out

While a large number of responses reflected, in one way or another, the idea of the interior designer as a specialist, and interior design as a specialized field, others, without actually denying this, maintained that any attempt at separating the interior of a space from its structural envelope showed a deep misunderstanding of aesthetic values. "Any architectural work deserving public attention must be in concept a unified experience," says Giorgio Cavaglieri AIA, of New York. "I believe any architect to be an interior designer if he is an architect at all. This of course does not deny the advantage of memory (experience) as an addition to imagination, nor the possibility of using people of special technical skill in presentation of ideas or for selection of accessories." In the final count, though, Mr. Cavaglieri feels that there are no functions specifically related to either the architect or the interior designer; "every individual is himself, there are only good and bad jobs."

Herbert Swinburne FAIA, of Philadelphia, likewise discourages thinking which treats interior space and exterior space as separate things: "they are both part of the same composition." Along the same lines, Richard Neutra FAIA considers the integration of the job as the primary goal, whatever the title of the professional.

More forthrightly, Ulrich Franzen states: "If you are interested in architecture and not facades, you cannot

talk of relative functions. If you are interested in business you can, of course, discuss the best ways of dividing the pie."

All the architects and interior designers replying had had some collaboration experience, and assessment ranged from "poor" (this from an interior designer), a qualified "fair to bad", "theoretically possible—experience disappointing" and "it never really works and is at best a marriage of convenience" to such reactions as "highly satisfactory" (again from an interior designer), "limited but valuable", "we have accomplished this with success", and "excellent". A common reaction was that collaboration had been excellent where the designer had formal architectural training or was "literally a craftsman or artist."

A problem of background?

This particular proviso appeared repeatedly in the reactions to the survey. "It is highly desirable," said David H. Wilson AIA of Baltimore, Md., "that an interior designer have some *formal* architectural training. Only then can he properly evaluate the psychological function and efficiency of his design. This will lead to better understanding and reflection of the architect's purpose."

Martha Crawford, an interior designer who recently assembled an exhibition of interiors at the New York Architectural League, is in favor of including a curriculum for interior designers in every architectural school, obliging interior designers-to-be to take courses in architecture given by the regular architectural faculty. But another view, along opposite lines, from an interior designer who is also a registered architect, maintains that "the average architect is not equipped to design interiors. The interior designer often is best qualified provided (he) has an understanding of structure."

Finishes, furnishings, equipment

The survey revealed considerable differences of opinion with regard to the assignment of responsibilities for the various elements of an interior project. Thinking on *wall and floor finishes* split fairly evenly along specialist lines, architects and interior designer responses both claiming that this was within their jurisdiction. It is of course important to distinguish, on the one hand, between such finishes as glazed structural facing tile, resilient and other flooring, and ceil-

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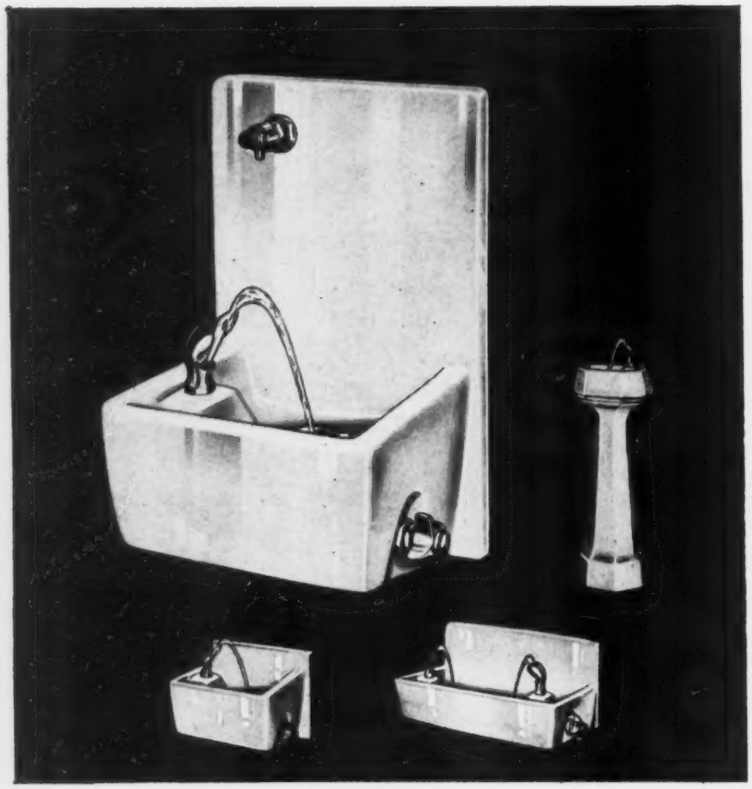

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ing acoustical treatment: these are generally included in the materials schedules forming part of architectural working drawings. On the other hand, applied finishes, such as paint, carpets, drapes, plastic wall paper and the like, revealed a greater degree of leeway as regards interior designer collaboration.

Opinion on *furnishings*, such as furniture and accessories, favored interior designer participation and decisions. This reflected the thinking of many architects, as well as interior designers, but it emphatically did not extend to lighting and lighting fixtures. Many architects declared that they sometimes selected furnishings, sometimes not. As for equipment layout, fixed equipment often falls into the realm of the kitchen or laboratory expert, and is handled by him.

"This office" state Bliss and Campbell, of Minneapolis, "selects all finish materials, light fixtures, hardware and built-in equipment. Generally we are engaged to do the rest of the interiors. If another interior designer is used, his work is limited to fabrics, carpets and movable furniture." This was, by and large, a representative comment.

Favor total design by architect

Some responses, however, viewed the entire process, from selection of finishes to lighting and drapes, as within the architect's province.

"In our small office we find that the province of the architect includes all work which is in larger offices done by an interior designer," says New Jersey architect George McDowell AIA. "Two facts are important: a) the size and type of the building and b) the architect's personal knowledge and ability. In our experience most building owners will not pay for additional services beyond building structure, and most architects are not equipped to render them. We . . . are jealous enough of our buildings to do more interior work than is normally done, and we feel we *are* interior designers . . . We would never, no matter how large we grew (engage a full-time) interior designer. Far better to pick outsiders who knew the specific problem of the moment, where such specialty knowledge is demanded." This office "helps" with carpet and drapery selection, has "upon occasion" picked furniture, but not accessories.

Office practice and preferences

Office practice on interior projects covers a considerable variety of experience, according to the survey. "When our drawings go out for bids," says Jack Thalheimer AIA, of Philadelphia, whose firm has an interior department headed by an associate in the firm, "every color, material and texture is listed in the specification and shown on separate color drawings, so that there is no question at the time of bidding as to what the architect had in mind. . . . As part of our office procedure we will not undertake an architectural project which would entail interior work if we do not handle the interior work ourselves, or the client does not have an interior designer selected at the start of the job."

"The architect should prepare layouts of equipment and a complete color and finish schedule." This is the view of Mark Perrin Lowrey AIA, of New Orleans who adds: "Furniture should be on special layout sheets prepared and scheduled by the interior designer. Lighting schedules and fixtures (except for custom designed ones) should be included on the electrical drawings by the architect." Lowrey believes personnel assigned to the job should be held to a minimum, with one person in control as supervisor.

Hugh Stubbins' office has in the design department one person, on a permanent basis, who specializes in materials, finishes and colors, and who, in addition, makes a point of keeping posted on furniture and other furnishings normally used by the firm. This person, furthermore, plays an important part in the layouts for buildings and in specifiying materials and finishes.

A different procedure involves a bid contract for the interior, with execution and supervision by the interior designer where there is no engineering involved. The designer is then compensated by the architect.

A more pragmatic approach is advocated by Miss Crawford: ". . . Procedure should really be based on the strong points of the personnel at hand. Some designers can't handle clients. Others are not good at supervision. Each architectural office also has its own way of producing a job which works out best for them through experience."

Another interior designer's viewpoint is reflected in the office procedure proposed by Edyth McCoon AID of New York. Drawings and specifications affecting finishes, furniture, fixtures and accessories should be submitted to the architect by the designer for inclusion in the specifications. As-

signment of personnel would be worked out between the two offices, with execution and supervision in the hands of the designer where so specified.

Along the same lines, a spokesman for Knoll Associates feels that drawings and specifications should originate in the interior designer's office for incorporation by the architect, all information to be funneled in both directions through one person, and execution to proceed under the general contract. Compensation would be by the owner on an hourly basis.

Payment

Compensation for interior design has been a sensitive subject, and procedures vary widely. Oregon architects Stewart and Richardson work on the basis that for any service involving design for fabrication they receive a fee. "If it is a matter of making selections from manufacturers' catalogs," they add, "then this service is included as part of our over-all design function and a special charge is not included.

"We are aware that this is not a completely satisfactory solution to the problem; however it does mean that on most of our jobs a great deal of interior design work is included in the general contract or as special furniture and cabinet fixtures, so that the cost of (furnishings) that are selected do not bear a very large proportion of the cost."

Lowrey believes that the architect should receive additional compensation for interior design contributions of a custom nature, in proportion to the amount of participation. Scrimenti, Swackhamer and Perantoni, of Somerville, N.J., who cover all interior items in their contract drawings and specifications, are compensated, on institutional work, on a percentage basis. On private work, the standard lump sum, percentage or negotiated fee system is followed. Fixed equipment is shown but furnished under separate contract, whereas movable furniture and equipment are not shown on the architectural plans.

In general architects considered selection of materials, finishes and color an integral part of their architectural service. Whenever more detailed work in the furnishing of a building was involved, cost plus fee was used.

Specialized projects

One area in which the contribution of interior designers was welcome with little division of opinion was in

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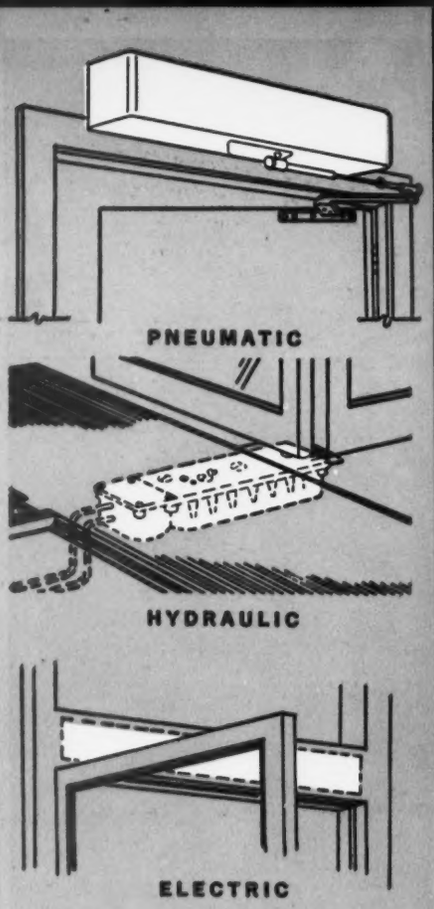

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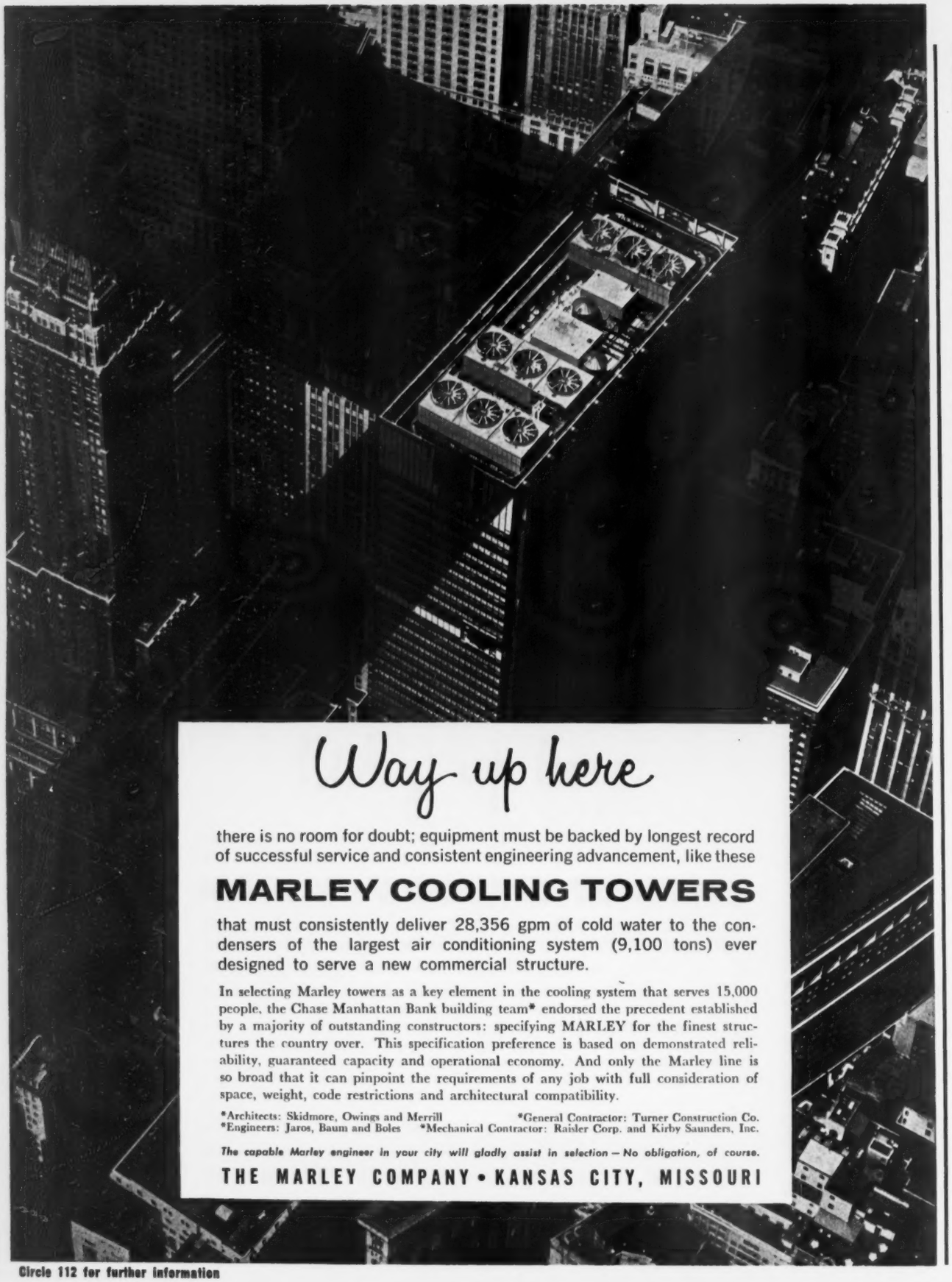
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the area of specialized design, for example stores, hotel foyers, motels, and lobbies of large public and private buildings. "They seem to have a field," one architect admits, somewhat grudgingly, "in office and store layout work."

One interior designer has more definite feelings. "This (store) is one area," she states, "where the interior designer should have . . . complete control of the interior over the architect. Having spent years in the department store design field, I find this is one area where the architect has not the knowledge nor the experience, since this is a specialized field in itself."

In most specialized interior projects involving complex activities and calling for definite and often prompt psychological impressions, architects have shown a willingness to accept the interior designer as specialist on a consultant basis, sometimes after prodding from the owner. In such instances, a common response has been to call for collaboration from the very beginning.

Interior designer on staff

An alternative approach suggested was to have an interior designer permanently associated with the firm, although this becomes less and less realistic, the smaller the office. Not every office can claim, with a South Bend, Ind. architect: "Our staff is blessed with color-interior perceptive personnel. We utilize this extensively . . ."

A Fargo, N.D. architect's office has interior designers on the staff, stressing "collaborative endeavor" and geographical togetherness. A Chicago opinion states" . . . because we feel unity of the team effort is greater with proximity and mutual understanding, we include (this discipline) within our office on our team . . . There should be mutual approval of finishes, equipment, light fixtures, layout," adding that it was of very little importance who made the initial suggestion, if both they (the team) and the client are "mutually agreed as to its appropriateness."

Personality-wise

This question of personality and "getting along" appeared repeatedly in replies. One architect feared a "Janus-faced result" unless the interior designer first understood the whole architectural concept and either refined or added to it in detail, "not simply (taking) off on his own imaginative tangent."

Miss Crawford, who has given considerable thought to architect-designer

collaboration, gives us an intimate glimpse of the problems sometimes facing the interior designer as he—or she—starts out on a project:

"My experience in (this) collaboration," she points out, "has been on the whole excellent. However I do find in the beginning that I must hold myself down until I have gained the architect's respect. How do I go about this? First of all it is generally assumed that an interior designer knows nothing about construction and cannot read a blueprint. So for a couple of days the blueprints are studied thoroughly, and anything that doesn't jibe is questioned with the architect. The approach used is that 'maybe I don't understand the drawings.' This catches up their mistakes in the drawings because no matter how thoroughly someone is in checking a large set of drawings, generally there are a few mistakes. Since these things can be corrected, the architect is grateful and starts to respect you, since he didn't realize that this was part of your service when he hired you.

Easy does it

"Next, on the first job, you feel that if you can get 25 per cent of your ideas home you are doing fine. To try and impose a new way of thinking or new ideas all at once is impossible, and I take the attitude that each job is a fresh start—constantly trying to attain perfection within the limitations of the job. Also I constantly try to remember there is more than one way to skin a cat.

"This is where attitude and discussion as to approach can be helpful. However, it has been my experience that after I have done three or four jobs for the same architect, they seem to leave more and more up to me. Also I think thoroughness counts greatly in their opinion. If they can turn over a job and know that it will be done without things left out or their getting ten dozen phone calls—which frees the architect to do his own work—this helps to cement the relationship between the interior designer and the architect."

Gamut of views

Responses to the A/E NEWS survey showed that architects and interior designers had given much thought to the problem of collaboration. Some replies were very forthright, others philosophical, a few pessimistic, most factual and reasonable. One small New Jersey architect stated: "We feel that a successful building depends not on the relative functions of an architect and interior designer, but on the education of the client—and the general public—to the fact that a building requires more than structure, and he must be prepared to pay for it."

Leading the team

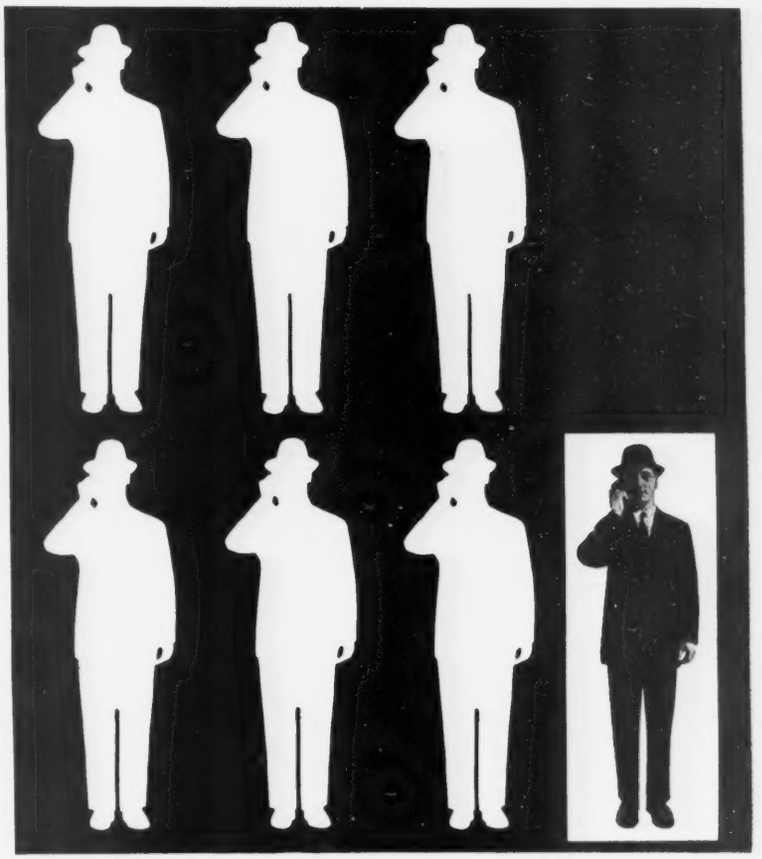
Relationship of the specialist to the architect as leader of the team was a theme which appeared consistently. From a Washington State architect came the view: "We do not believe that the architect is merely the coordinator of the work of the (consulting) engineers, the interior (designer), the landscape architect, etc. We believe that the whole design concept of any building starts in the mind of one individual—the architect. This one person must maintain complete control of the entire development of his design concept in order to arrive at a successful building. Colors, textures, furniture, accessories, light fixtures—these are all part of a whole design, and therefore only in the province of the architect.

"On small projects, all phases of the design . . . should be the responsibility of one person. On larger projects the consultants should act as *consultants*. They should never be given a free hand to develop any ideas but those of the original designer."

Zane Yost AIA, from the office of Victor Christ-Janer, puts it this way: "The interior designer *should* be an architect . . . with the ability to translate the philosophic intent of the design into a coordinated interior-structural-exterior totality; a specialist must understand the whole before he can perfect any study of one area."

And from Max Flatow AIA of Albuquerque, N.M.: "The architect's service should embrace interior design either as a part of the architect's staff or as consultant to the architect. No other method will produce integrated design."

Turning again to Martha Crawford, we end with a conciliatory view which says that ". . . occasionally you have an interior designer hired with more knowledge of how to reinforce the architectural design than the architect. Also the reverse can be true. That is why I don't feel you can set a hard and fast rule as to whose is which province. There are times when . . . I will insist the equipment selection is my province, and I have complete control of the interior. There are other times when I would welcome criticism from the architect on my selections."



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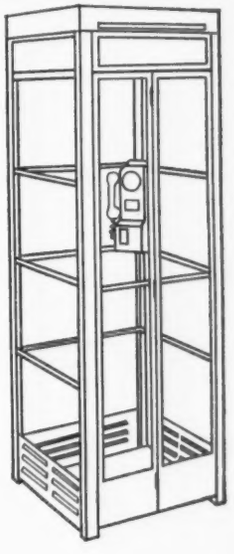

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color: should it be standardized?

Fifty years ago, an architect designing a building was limited to a choice of about 25 colors. Today, the number of colors available to him is estimated at "considerably over 5,000." While this wider range of colors has brought many benefits to architects, especially in the field of design, it has also presented problems.

Following a method started recently in England (where manufacturers of pre-mixed paints established an industry-wide color standard limited to the production of only 101 different shades and tints) some architectural and other interested groups are advocating standardization of color in the building industry of this country.

Trip to the quarry

They point out that the architect no longer travels to the quarry to pick out a color and texture of stone for the cutter as they did in the Renaissance. Today, they say, architects depend mainly on written or spoken words to convey color needs, and because of a lack of vocabulary in color, and because of the unlimited palette, some type of order should be established.

Waldron Faulkner FAIA, a pioneer in the movement for architectural standardization of color in this country, feels that color standards are needed in the same way that feet, pounds and gallons are required as a basic of measurement.

He does not agree with architects who contend color standards would impair selection, limit color variation, present a threat of color repetition, discourage individual experimentation with colors and generally lead to unimaginative use of colors.

Faulkner says that "limitations are the artist's best friend." He feels that architects could use standard colors without feeling unduly limited. "They (the architects) could always get a special color if they really needed it. We are already limited in the color range of most building products. The real need is that existing standard colors should be better selected and, once selected, they should be held to reasonable tolerances . . . A limited range of standard colors would be a real benefit to all concerned."

A/E NEWS survey

In order to obtain a wide sampling of opinion on color standardization, A/E NEWS sent a questionnaire to selected architects in every part of the country, as well as to selected interior designers and manufacturers involved in the use and production of colored architectural products.

Most of the replies showed this group to feel that standardization would hobble their use of color. For the most part, they also believed that standards would ultimately reduce the availability of color, and could lead to unimaginative use of color in architecture.

Those who advocate a limitation of color usage in architecture to a predetermined selection incurred the almost unanimous wrath of this group. Mark P. Lowrey AIA of New Orleans said, "standards should be used only by those whose sense of color is not imaginative." Expanding on this, Arthur Rigolo AIA, from New Jersey, comments, "colors of building products and finishes should be improved, but not narrowed. Many existing building products need expert and serious analysis and improvement in their colors, but a limiting standardization would seriously hamper designers who should be given wide latitude. Note, for instance, school lockers which are now standardized in a miserable olive green or a miserable gray. If standards are to be provided in a wide range, then the colors probably should be established by a survey among architects, but coordinated by a color specialist. Industry wide cooperation to achieve reasonable compatibility between colors of various products would also be ideal."

Florence Schust Knoll of Knoll Associates, Inc., interior designers (see NAMES, page 94) feels that a standardized color system is a very wise idea and should be a help to architects and designers provided it is extensive enough to include all colors they would want to use and that it could be properly set up and maintained.

Communicating colors

While most architects, interior designers and manufacturers were opposed, in answering the survey, to *standards* for color, many acknowledged the need for a clearer *communication* of color requirements.

Deane B. Judd of the Photometry and Colorimetry Section of the National Bureau of Standards feels that "architects would welcome a method of specifying color once they had been convinced that the method is practical. The essence of the method is that it shall provide for convenient expression of tolerable ranges of color for primary materials (wood, stone and brick) and shall be adaptable to much smaller tolerable color ranges for secondary materials (paint, paper, tex-

tiles, plastics, ceramics) whose color relation to those of the primary materials must and can be controlled with good precision."

Judd agrees with the architects that "a limited set of colors would serve no useful purpose." He points out that "what is needed is the adoption of a method by which the architect may designate precisely his color ideas so that the builder may implement them."

R. T. Holtz of the B. F. Goodrich Chemical Company believes color standards would provide easier communication between architect and product manufacturer and help provide clearer specifications on colors. He points out that specifications could also be established on color *stability* and *durability*.

Bliss & Campbell, Minneapolis architects, believe that "standard designation for color would be very helpful, rather than the present meaningless names" used by manufacturers.

Color and the spec. writer

"There is no question that the adoption of color standards would provide easier communication of color description. There is the classic example of Robert Louis Stevenson writing from Samoa to his friend Sidney Colvin in London, asking him to send some certain material to match a color in his house based on Stevenson's written description. Of course, when the material arrived the color was all wrong. This situation would not have existed if color standards had been in general use at that time," Waldron Faulkner points out.

Others agreed that standards for color, or standards in communication of color, would aid the specifications writer, but they questioned its worth. Martha Crawford, interior designer of New York, asks, "are we going to sacrifice design and quality just to make it easier for the specifications writer?"

Along the same lines, Ulrich Franzen AIA points out that "the only ones who would be served by color standards are the fellows who market a product—and specify it. Since this does not contribute to a better architecture I can see no point to it."

Edyth McCoon AID agreed that color standards would improve specification writing, "but freedom, initiative and original ideas would be lost."

Edmund Staszko AIA, expected that standards would simplify specification writing and in general improve communication between architect, client and builder. But he wondered if archi-

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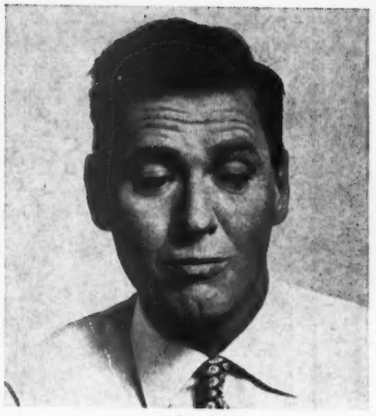

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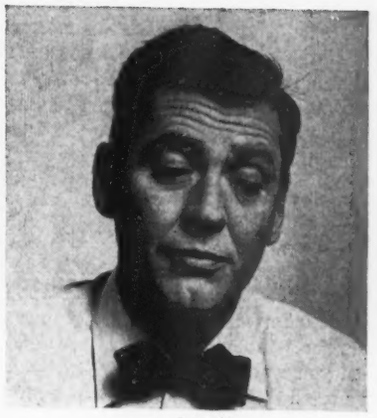

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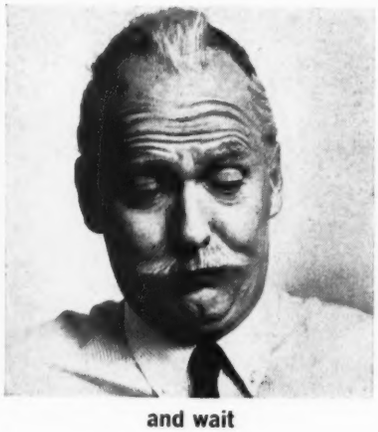

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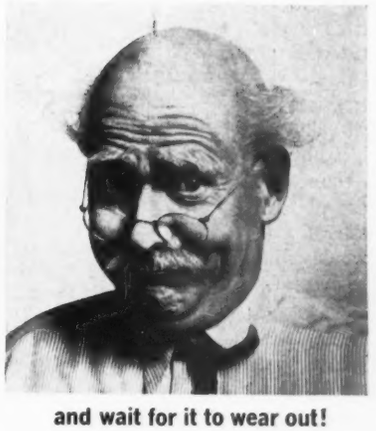

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tects should accept standards merely to simplify specification writing: "what is really important," he said, "is that standards could discourage experimentation, and in general lead to unimaginative use of color."

Nuts and bolts

"Standardization is fine," commented Barry L. Roenfeldt AIA, of College Place, Washington, "to a certain extent! We are in favor of standard sizes for nuts and bolts. Standard sizes for windows and doors are fine, until you want an odd size. Have you ever tried to buy a 5'x10' piece of plywood? If you can get it, you have to pay a premium for it.

"The point is: as soon as you standardize, you limit. It would certainly simplify specification writing to standardize colors. It would simplify everything—except the work of the designer."

Brock Arms AIA, president of the Interior Space Design division of Perkins and Will, noted that "mass production has given us such a wide variety of visual effects that our architecture has become quite disparate . . . On the other hand, with all of the color available to us in building materials, most of our cities have a drab greyness which is the result of timidity in the use of color. It is difficult to guess whether architects generally have enough taste to use a wide range of color effectively and harmoniously, or whether given a limited number of colors the effect would be to help unify environment. My guess would be fewer colors (if well chosen by the manufacturer, which, by the way, cannot necessarily be counted on) would tend to reduce some of the garish mistakes that are made. On the other hand, it would probably limit some of the outstanding successes."

One solution?

Edmund Staszko AIA felt the easiest solution to the color problem would be color-blind architects.

Phelps H. Bultman AIA of Columbia, S. C., said that he had no opinion on color standards but could only "plead for a standardized color coding system which would carry through all products—ease of matching and combining, etc., approval of equal selections by various manufacturers," and sort out completely the present confusion in color.

The Inter-Society Color Council

Collaboration between some major *users* of color has been established in

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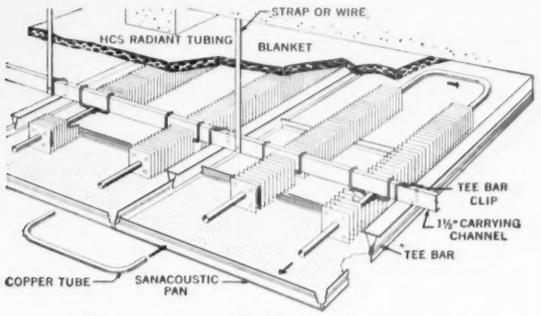

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S An HCS ceiling provides year-round sound conditioning, too, because noise in the room is absorbed by an acoustical blanket above the perforated metal ceiling. It can soak up as much as 90% of the sound striking it.
Guilderland (N. Y.) Jr. High School
Architects: Urbahn and Brayton

the *Inter-Society Color Council* whose purpose is "to stimulate and coordinate the work being done by various societies, organizations and associations, leading to the standardization, description and specification of color, and to promote the practical application of these results to the color problems arising in science, art and industry."

The American Institute of Architects, American Institute of Interior Decorators and the American Society for Testing and Materials are among the 27 member organizations of the Council.

ICSS Procedure

This group, which is over 30 years old, handles and coordinates problems in color by establishing study committees. Presently under study by various committees are such problems as *color names; expression of historical color usage; standard methods for mounting textile samples for colorimetric measurement; color in the building industry* (Waldron Faulkner is chairman of this study group); *and material standards for colorimetry of opaque, translucent, and transparent materials.*

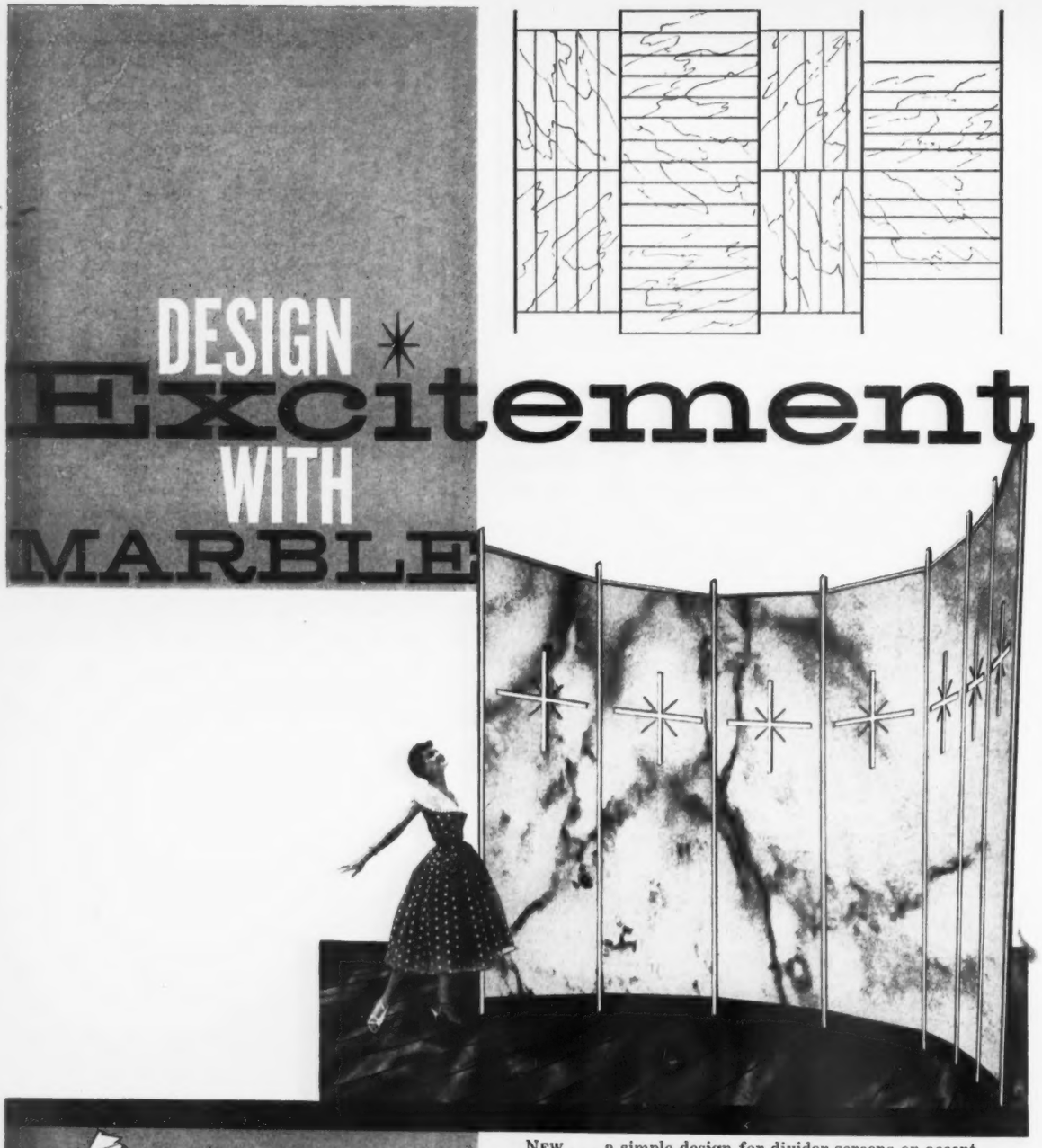
This organization has published two bibliographies on color, one in a bound edition called the "ISCC Bibliography on Color," which appeared October 1957. (This 350 page document can be obtained by writing ISCC-Godlove Bibliography, Braden-Sutphin Ink Company, 3650 East 93rd Street, Cleveland 5, Ohio, Attention: Mr. G. L. Erikson. The price is $3.75). The other bibliography is a running list published in the ISCC NEWSLETTER. Most major libraries receive the NEWSLETTER.

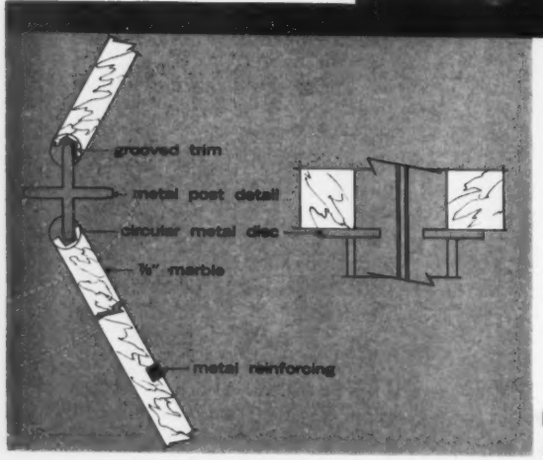
But major confusion in color still exists, and the establishment of color standards by the Council, if at all feasible seems many years away.

For a vocabulary

What is needed, according to Warren L. Rhodes, head of the Graphic Arts Research Department at Rochester Institute of Technology (and Editor of the ICSS NEWSLETTER), is a means so that "each individual when writing or speaking could have in his vocabulary terms which were specific enough so that the informed reader or listener would not be misled."

Good and bad use of color, confused communication, improper matching and blending of color remains the basic problem. There are at present various systems and methods of identifying colors, but they appear inade-





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quate and are limited to a predetermined range of color.

While most architects, interior designers and manufacturers answering the A/E NEWS survey opposed standardization of color, many still wanted a simplified method of *communicating* color, but implemented in such a way that it would not hobble color usage, and ultimately architectural design.

The suggestions and comments made by Hugh Stubbins FAIA are worth considering:—"Without a doubt," he says, "color presents one of the large problems of communication in specification work for the architect. The problems might be somewhat simplified by some method of color standardization, but this is neither desirable nor necessary to improve the situation from what it is today.

"I would suggest rather a system of color identification by numbers and shades, or blends by number combinations, rather than the (elaborate descriptive) terms used by every manufacturer today. This numerical color index would be standardized for all firms or manufacturers so that, for example, a true pigment red would be the same . . . thus eliminating an endless search through some fifteen "pure" reds to obtain the desired one.

"A method of identification rather than a standardization of colors must come from the industry and should, for it would be a purely impersonal method of communicating colors available from any one or all companies.

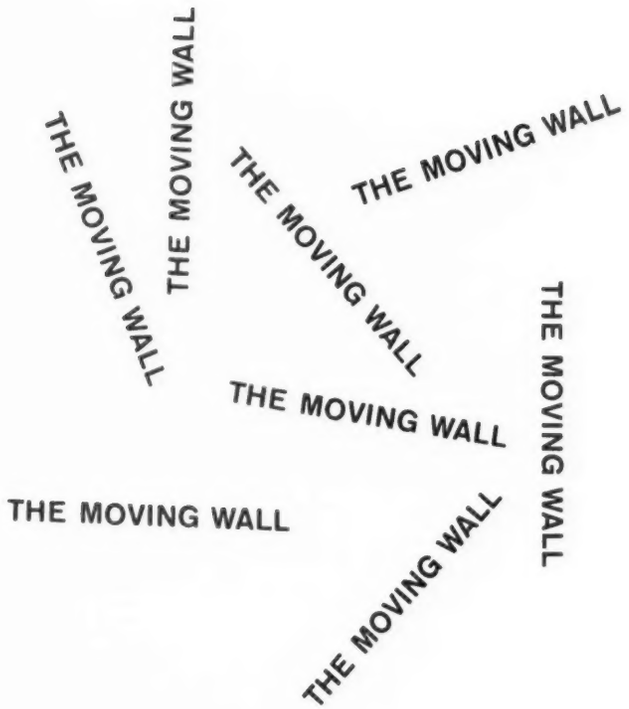
"If the above system were applied to the color industry, it would not limit the architect's palette, and it would most certainly simplify it for the architect and for the manufacturer. Communication of any color would then be possible by means of a standard method of identification adopted by the industry."

Color: conclusion

The foregoing suggestion is a possible answer. The majority of replies to this survey appear to agree with the statement by Herbert H. Swinburne FAIA, to wit: "The use of color is a creative act—it can't be reduced to formula or preconceived answers."

If architects are opposed to standards which would limit the range and use of colors, what does seem to be needed is a simplified method of color communication, without any limitation.

The AIA and the other members of the Inter-Society Color Council are—or should be—equipped to implement this type of system.



Flexibility, aesthetic considerations based on the open plan concept and the virtual disappearance of the interior bearing wall have resulted in a widespread and varied production of movable floor-to-ceiling partition systems. Any partition system is basically movable, but in this context the term "movable" implies a "salvageability" in the neighborhood of 100% whenever such a wall is moved from one location to another. Other systems are not so economically transposed, but in some cases such flexibility may not, of course, be necessary. (The relative applications of the two approaches to partition planning are discussed as part of an article on page 12).

Chart

In preparing the chart which appears on the following two pages, A&E NEWS had as its goal the presentation, in a manner both concise and comprehensive, the most up to date information available on floor-to-ceiling movable partitions. The chart lists partition characteristics a designer will need to know before making a selection, and relates these characteristics to the partitions listed.

The variety of partitions is such that it was found desirable to establish certain categories having similar structural properties. The system used provides for four such categories: **I.** FLUSH TYPE, **II.** SEMIFLUSH TYPE, **III.** POST AND PANEL, and **IV.** OTHER. This last classification includes chiefly folding and roll-back partitions.

Purpose

It is clearly impossible in the scope of a table to describe exhaustively each partition system; nor, for similar reasons, has it been considered practical to include detail drawings showing how components come together and how they are attached to wall, floor and ceiling. Some systems permit infinite variety in this respect. The real purpose was to show at a glance all principal characteristics. This framework of basic data required for a preliminary decision can then be filled out by consulting the manufacturer.

A word about modules. If a system is "modular" in the full sense of the word, it retains its modularity in both plan directions, that is to say, it fits a grid. Whether it can do so or not depends on the "linkage" device at corners. Chart column "W" is based on modular availability in straight-line increments. "Grid" modularity must be confirmed with the manufacturer.

		PHYSICAL PROPERTIES & DIMENSIONS						PANELS				POSTS	
		A	B	C	D	E	F	G	H	I	J	K	L
		Weight (PSF)	Fire Rating	Stock Heights	Overall Panel Thickness	Post Size	Sound Transmission (db)	Surface Material	Core Material (if any)	Top Rail Height	Height of Base	Material	Spacing
I.	**AIRWALL** Airwall, Inc.	1½-2	—	Custom 12′ Max.	2″	—	Tests Pending	—[1]	Exp. Styrene	4″	3½″ Vinyl	None	None
	UNIVERSAL Johns-Manville Corp.	4	—	7′6″ & 8′6″	1¾″	—	28.5	Flex-board	Fiber-board	2¼″	6″	None	—
	CLASS "A" Johns-Manville Corp.	5	—	7′3½″	1¾″	—	29.5	Flex-board	Mineral	2¼″	4″-6″	None	—
	IMPERIAL Johns-Manville Corp.	6.2	1 hr.	7′6″ & 8′6″	3⅞″	—	33	Marin'te/ Transite	None	2¼″	6″	None	—
	ROCKFACE & BIRCHFACE White Partitions, Inc.	3	—	UP to 10′	2½″	¾″	22 and [5] 37.5	Asb. Sht. or Plyw.	Asbestos	4″	4″	Wood	Up to 4′
	CHEVIOT White Partitions, Inc.	5	—	Up to 10′	2⅝″	2⅜″	35 and [5] 41.5	—[7]	Mineral	2″	4″	Steel	Up to 4′
	AETNAWALL 238 Aetna Steel Products Corp.	4½	—	Custom	2⅜″	2⅜″	32	Steel	Mineral	2¼″	4″-6″	Steel	Multiples of 6″
	AETNAWALL 200 Aetna Steel Products Corp.	4½	—	Custom	2″	1½″	32	Steel	Mineral	2¼″	3″-4″	Steel	Max. 60″
	AETNAWALL T Aetna Steel Products Corp.	4½	—	Custom	3″	—	32	Steel	Mineral	2¼″	4″-6″	Steel	Max. 60″
	RF Virginia Metal Products Co.	6±	—	Custom	3″	—	—	Steel	Mineral	—	4″ or 6″	—	—
	FP Virginia Metal Products Co.	6±	—	Custom	2⅜″	—	—	Steel	Mineral	—	4″ or 6″	—	—
	CORPORATE Virginia Metal Products Co.	6±	—	Custom	3″	—	—	Steel	Mineral	—	4″	—	—
	CUSTOMWALL Virginia Metal Products Co.	6±	—	Custom	3″	—	—	Steel or Non-metal	Mineral	—	4″	—	—
	TYPE F National Steel Partition Co.	6	—	42-66-86″ 98-110-122″	3″	3″x3½″	—	Steel	Mineral	—	6″	Metal	Varies
	TYPE S National Steel Partition Co.	6	—	—	3″	—	—	Steel	Mineral	—	6″	Metal	Varies
	TYPE P National Steel Partition Co.	4	—	—	1¾″	1¾″x1¾″	—	Steel	Mineral	—	4″	Metal	Varies
	FORECAST SERIES The Mills Co.	5¼	—	7′3″ to 10′3″	2¼″ Max.	1⁹⁄₁₆″x 2¼″	40+	Steel	Fiber-glas	2″	4″	Steel	To 5′ in 4″ multiples
	WEBERWALL "CONCEPT" Weber, Showcase & Fixture Co.	5.5	1 hr.	7′5″/9′ 10′	3″	3″x3″	35 to 40	Steel	Mineral	—	4″	Steel	3″ Mod.
	DESIGN 100 US Plywood Corp.	3-4.5	1 hr. Pending	Up to 12′	1¾″	2¾″	36.5 and [5] and 37.5	Choice Open	Mineral	Custom	4½″ or Custom	⅜″ Plyw.	Varies
	DESIGN 101 US Plywood Corp.	3-4.5	1 hr. Pending	Up to 12′	1¾″	1¾″	36.5 and [5] and 37.5	Choice Open	Mineral	Custom	4½″ or Custom	⅜″ Plyw.	Varies
II.	**DESIGN 102** US Plywood Corp.	3-4.5	1 hr. Pending	Up to 12′	1¾″	⅞″ Alum.	36.5 and [5] and 37.5	Choice Open	Mineral	Custom	4½″ or Custom	Aluminum	Varies
	DESIGN 103 US Plywood Corp.	3-4.5	1 hr. Pending	Up to [13] 12′	1¾″	Single Line Joint	36.5 and [5] and 37.5	Choice Open	Mineral	Custom	4½″ or Custom	—	Varies
	DESIGN 104 US Plywood Corp.	3-4.5	1 hr. Pending	Up to [13] 12′	1¾″	2¾″ Alum.	36.5 and [5] and 37.5	Choice Open	Mineral	Custom	4½″ or Custom	Aluminum	Varies
	ALUMINUM SERIES The Mills Co.	Varied	—	To 10′	2⅛″ Max.	2½″	—	Steel and as req.	Honeycomb or None	2½″	3¼″	Aluminum	1′ to 5′
	COLORLINE 500 SERIES Unistrut Products Co.	6-9	None	To Fit	2⅜″	1⅝″	38	—[14]	None[15]	To Fit	4¾″	Steel	4′-1″
	DONN DH "A" "B" "C" Donn Products, Inc.	Varies[21]	—	Up to 16′	2¾″	2¾″	—[22]	—	—	To Fit	2½″ or 4″	Steel[23]	2′-4′
III.	**COLORLINE** Unistrut Products Co.	4-5	None	To Fit	⅛″ to ~ ¾″	1⅝″	30	—[16]	None	To Fit	1⅝″	Steel	4′-2″ or as req.
	TYPE SM National Steel Partition Co.	5	—	42-66-86″- 98-110-122″	⅜″	3″x3½″	—	Steel	Corr. Cardboard	—	6″	Metal	Varies
IV.	**FOLDERWAY-DOOR-WALL** Richards-Wilcox Mfg. Co.	5-20	Custom	Custom	1¾″ to 6½″	—	23-58	Choice Open	Hon'yc'b[17] or Custom	Varies	As req.	—	—
	SOUNDMASTER 240 New Castle Products, Inc.	5	Varied	Up to 27′	7¾″	1¾″x1½″	35 and 43[5]	Coated Cloth	—	—	—	Vin. Cov. Steel	—
	SPANMASTER New Castle Products, Inc.	2¾	Varied	Up to 27′	7¾″	1¾″x1½″	10 and 30[5]	Coated Cloth	—	—	—	Vin. Cov. Steel	—
	MODERNFOLD 800 New Castle Products, Inc.	2	Varied	Up to 22′	5¾″	1¼″x1¼″	9 and 29[5]	Coated Cloth	—	—	—	Vin. Cov. Steel	—
	WALL-A-WAY WOOD Torjesen Co.	3-6	No	None	1¾″-4″	—	35	Match	Custom	—	—	—	—
	PELLA WOOD Rolscreen Co.	3¾	—	None	1¹⁄₁₆″	—	—	Wood Veneer	Stabilized Wood	—	—	—	—
	COILWAL Coil-wal Partition Co.	2¾	1 hr.	Up to 30′	¾″ Std.	—	—	Wood	—	—	—	—	—

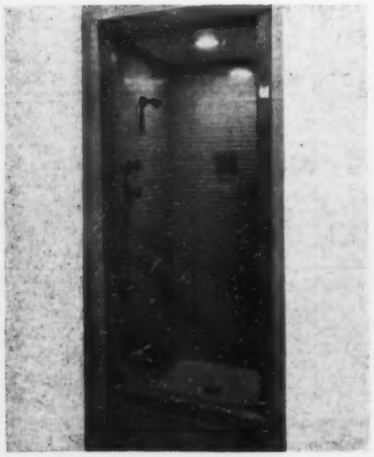
[1] Laminated plastics, vinyls, wood veneers
[2] Same as one, with lacquer finish
[3] Cylindrical locks — butts, closers, also specials if required
[4] Flexboard-faced metal or wood
[5] At 256 cps and 1024 cps
[6] Glass panels can be interchanged
[7] Vinyl plywood high pressure laminate
[8] One pair BB butts, cylindrical lockset
[9] Steel phosphatized, rust inhibiting primer, enamel finish
[10] Expansion anchors, screws
[11] 1 pair 5x4 template butts, Yale & Towne 4500 Series locks, Glynn — Johnson 13FBX Stop concealed closers
[12] Recessed head and base; no base-no head-open base; accent joint; accent joint with slotted vertical spline for shelving
[13] For WELDROK incombustible core

FINISHES			ACCESSORIES FURNISHED				MISCELLANEOUS CHARACTERISTICS								
M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	AA	BB
Number of Stock Colors Avail.	Light Reflectance Range	Finish Type	Hardw.	Attachments	Glass	Doors	Can Wiring: Rec'ptcls Be Incorp.?	Inter-Ch'ng'bl Panels?	Custom Variations	Available in Modular Dim.	Instl/d Cost — Avg./ Sq. Ft.	Length Time in Prod. (Yrs.)	Servicing By	Spec. in Mfr's. Lit.	Guarantee M'tr'ls — M W'km'ship — W
Unlmtd	—	—[2]	Door Only	Not Req.	Windows Plexiglass	Yes	No	Yes	Yes	Yes	$6 - $9	2	Mfr. and Dist.	Yes	M and W 1 Yr.
12	60-75%	Plexstone Acrylic	Yes[3]	Yes	Yes	Yes[4]	Yes	Yes	No	Yes	$2.50	25	Mfr. and Cont.	Yes	1 Yr.
12	60-75%	Plexstone Acrylic	Yes[3]	Yes	Yes	Yes[4]	Yes	Yes	No	Yes	$2.75	10	Mfr. and Cont.	Yes	1 Yr.
12	60-75%	Plexstone Acrylic	Yes[3]	Yes	Yes	Yes[4]	Yes	Yes	Yes	Yes	$3.25	30	Mfr. and Cont.	Yes	1 Yr.
3	60-75%	Lacquer	Yes	—	Yes	Hollow Core	Yes	Yes[6]	Yes	Yes	—	Co 36 Pd 36	Dist.	Yes	1 Yr.
3	60-75%	As Specified	Yes	—	Yes	Yes	Yes	Yes[6]	Yes	Yes	—	Co 36 Pd 1	Dist.	Yes	1 Yr.
150	—	Rust Inhib.	Yes[8]	—	Yes	1¾" H'lwm'tl	Yes	Yes	Yes	Yes	—	16	Mfr.	Yes	M and W 1 Yr.
150	—	Rust Inhib.	Yes[8]	—	Yes	2" H'lwm'tl	Yes	Yes	Yes	Yes	—	3	Mfr.	No	M and W 1 Yr.
150	—	Rust Inhib.	Yes[8]	—	Yes	1⅜" H'lwm'tl	Yes	Yes	Yes	Yes	—	4	Mfr.	Yes	M and W 1 Yr.
36	20-80%	Modified Alkyd-urea	Yes	Yes	Yes	Steel-wood	Yes	Yes	Yes	Yes	$22+ /LF	30	Mfr.	Yes	1 Yr.
36	20-80%	Modified Alkyd-urea	Yes	Yes	Yes	Steel-wood	Yes	Yes	Yes	Yes	$20+ /LF	12	Mfr.	Yes	1 Yr.
36	20-80%	Modified Alkyd-urea	Yes	Yes	Yes	Steel-wood	Yes	Yes	Yes	One Way Only	$23+ /LF	1	Mfr.	Yes	1 Yr.
36	20-80%	Modified Alkyd-urea	Yes	Yes	Yes	Steel-wood	Yes	Yes	Yes	Yes	$25+ /LF	3	Mfr.	Yes	1 Yr.
30	—	Rust Inhib.	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	—	25	Mfr.	Yes	1 Yr.
30	—	Rust Inhib.	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	—	25	Mfr.	Yes	1 Yr.
30	—	—	Yes	Yes	Yes	Yes	Yes	—	—	Yes	—	25	Mfr.	Yes	1 Yr.
16	Minimum 30%	—[9]	Yes	Yes[10]	Yes	Yes	Yes	Yes	Yes	Yes	$3.00	Co 40 Pd 1	Mfr.	Yes	Yes
15	15-77%	Enamel	Yes[11]	Yes	Yes	Yes	Yes	Yes	Yes[12]	Yes	—	Co 63 Pd 2	Mfr.	Yes	1 Yr.
Unlmtd.	Varies	Varies	Yes	None	Yes	Yes	Yes	Yes	Yes	Yes	$2.75 to 4.50+	7	Dist.	Yes	Install Life
Unlmtd.	Varies	Varies	Yes	None	Yes	Yes	Yes	Yes	Yes	Yes	$2.75 to 4.50+	7	Dist.	Yes	Install Life
Unlmtd.	Varies	Varies	Yes	None	Yes	Yes	Yes—In Baseboard	Yes	Yes	Yes	$2.75 to 4.50+	4	Dist.	Yes	Install Life
Unlmtd.	Varies	Varies	Yes	None	Yes	Yes	Yes—In Baseboard	Yes	Yes	Yes	$2.75 to 4.50+	4	Dist.	Yes	Install Life
Unlmtd.	Varies	Varies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	$2.75 to 4.50+	Available Jan. 1962	Dist.	Yes	Install Life
16 and Custom	Min. 30%	—[9]	Yes	Yes[10]	Optional	Yes	—	Yes	Yes	Yes	$4.00	Co 40 Pd 5	Mfr.	Yes	Yes
Open	—	—	Yes	Shelf Brackets	Yes	Steel-wood	Yes	Yes	Yes	Yes	—	—	Dist.	Yes	M and W 3 Mo.
5	—	Baked Enamel	—	—	—	—	Yes	Yes[24]	Yes	Yes	$1.08[25] 1.20	Co 8 Pd 1	Installer	Yes	M — 1 yr.
Open	—	—	Yes	Shelf Brackets	Yes	Steel-wood	Yes	Yes	Yes	Yes	—	—	Dist.	Yes	M and W 3 Mo.
30	—	Rust Inhib.	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	—	25	Mfr.	Yes	1 Yr.
Custom	—	Custom	Yes	—	No	Yes	Yes	No	Yes	Custom	—	Co 81 Pd 40	Mfr.	Yes	M and W 1 Yr.
38	—	Vinyl	Yes[18]	Yes[19]	—	Yes[20]	No	No	Yes	Yes	$5.50	Co 25 Pd 2	Mfr. Dist.	Yes	M and W 1 Yr.
38	—	Vinyl	Yes[18]	Yes[19]	—	Yes[20]	No	No	Yes	Yes	$4.50	20	Mfr. Dist.	Yes	M and W 1 Yr.
38	—	Vinyl	Yes[18]	Yes[19]	—	Yes[20]	No	No	Yes	Yes	$3.75	25	Mfr. Dist.	Yes	M and W 1 Yr.
Custom	—	Custom	—	—	—	—	—	—	Yes	—	$1.00 to $10.00	10	Mfr.	Yes	1 Yr.
6 Veneers	—	Lacquer	Yes	Yes	—	—	No	—	Yes	Yes	—	Co 35 Pd 2	Installer	Yes	M and W Yes
—	—	—	Yes	Yes	—	Yes	No	No	—	—	—	6	Installer	Yes	M and W 1 Yr.

[14] Any ⅜" panel
[15] Or plank insulation as required
[16] Any panel ⅛" to ¾" thick
[17] Kraft honeycomb with special sound insulation as required
[18] Privacy lock or latch; "pull-in" latch, aluminum wall mouldings
[19] Ceiling track; track switches; electric motor operators
[20] Pass-through and emergency
[21] "A" weighs 5 PSF for 2' panel, 4½ PSF for 4' panel. "B" weighs 5 PSF and "C" 5½ PSF, both for 2' panels. All based on ½" wall board
[22] ASTM E90-61T sound transmission class, 36, 33 and 28 respectively
[23] Extruded aluminum or prepainted snap-on available
[24] Panels can be interchanged from panel to glass or glass to panel
[25] Costs based on 8' ceiling, ht., ½" gypsum panels, painted, straight run, no corners or doors

PRODUCTS, EQUIPMENT, MATERIALS

Report of recent developments by industry, based on data furnished by manufacturers. Inquiry cards for further information face pages 1 and 98.



PLASTIC SHOWER STALL AS ONE PIECE UNIT

MFR'S DESCRIPTION: one-piece, prebuilt shower stall of reinforced plastic.

USES: installation of pre-fab units

SPECS/FEATURES: shower stall, molded of polyester resin reinforced with fiberglass, is designed for easy and quick installation. Finish will not corrode, and resists mildew and fungus growth. Mild soap will maintain finish. Standard color is porcelain white, but optional colors are available. Plumbing fixtures may be installed on either side of stall. Exterior measurements are 37⅛" x 34"x81½".

AIA FILE NO. 29-H-3

MFR: CERALYTE CORP.

Circle 202 for further information

CONCRETE MURALS IN BAS-RELIEF

MFR'S DESCRIPTION: one-of-a-kind bas-relief murals in concrete at moderate cost.

USES: interior and exterior murals

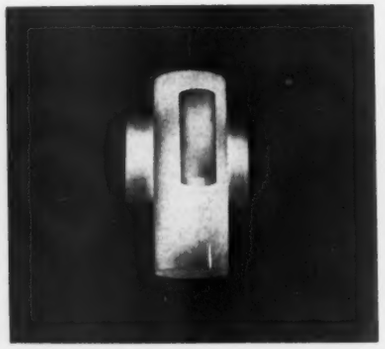
SPECS/FEATURES: polystyrene plastic foam is used by sculptor as matrix or form, helping reduce costs. Concrete is poured into form in whatever color desired and with imbedded reinforcement where required. Since matrix is largely destroyed in process of separating it from concrete, panel remains an original sculpture. Murals are produced in 2 to 8 sq. ft. of face, and joined together at job site. Use of polystyrene plastic foam reduces costs of manufacturing murals.

AIA FILE NO. 25-D-4

MFR: PLASTICRETE CORP.

SCULPTOR: JOHN G. MARSHALL

Circle 201 for further information



NEW STYLE LAMP FIXTURE

MFR'S DESCRIPTION: a new four-unit cluster lamp fixture suspended from a single stem.

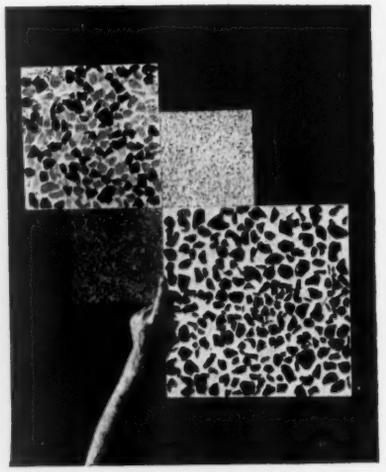
USES: interior lighting.

SPECS/FEATURES: fixture is wired for three circuits making possible a dim, medium or bright setting. Lamp utilizes three small bulbs in a cluster for upward lighting, a large bulb for direct downward lighting supplemented with two smaller bulbs at the sides, also directed downwards.

AIA FILE NO. 31-F-23

MFR: HABITAT, INC.

Circle 200 for further information



MARBLE TERRAZZO TILE WITH BUTTED JOINTS

MFR'S DESCRIPTION: an entirely new terrazzo tile said to be so dimensionally perfect that it can be laid with a butted joint.

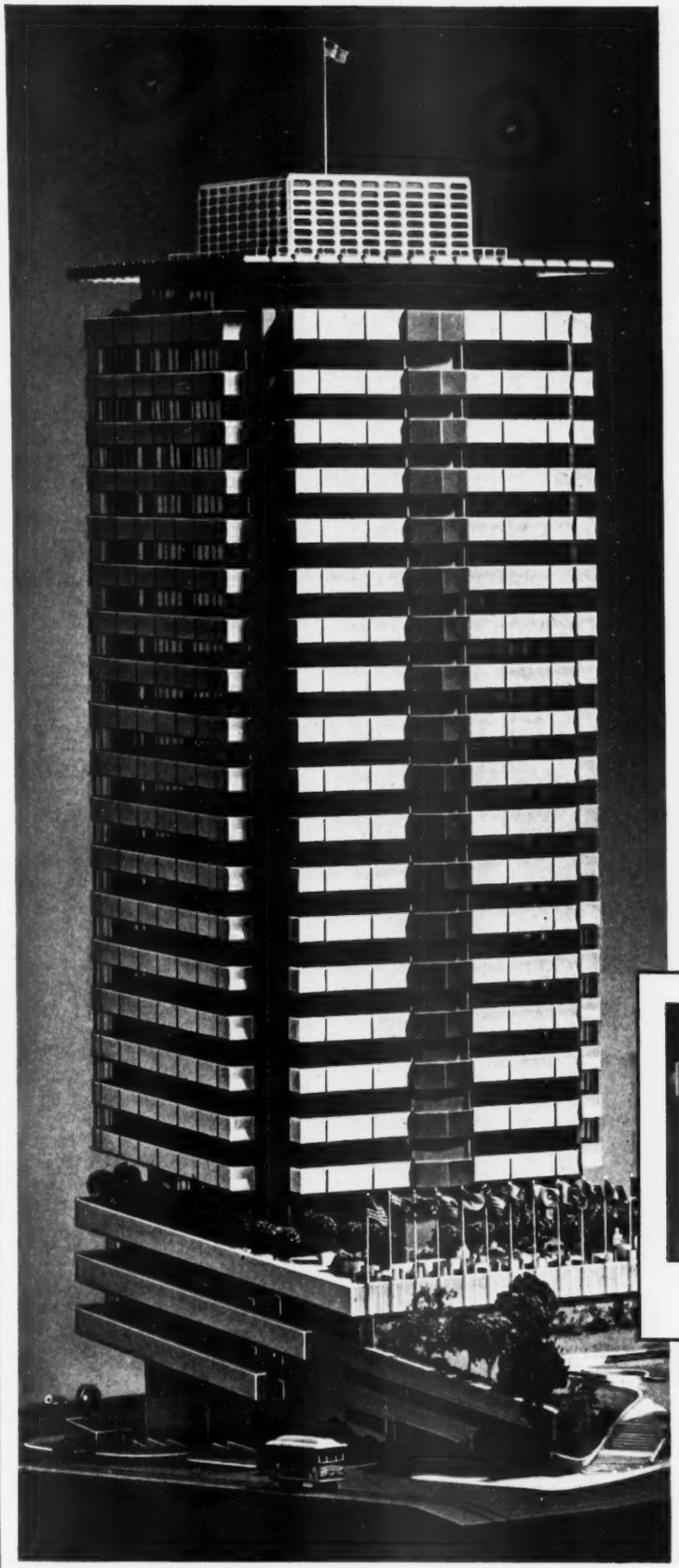
USES: tiling

SPECS/FEATURES: tile is produced by using Italian developed and manufactured machinery. A matrix of marble chips, of varying size and color, and a formulated binder is pressed at 115 kilos per centimeter giving tile strength that is said to be not unlike prestressed concrete. Company says tile offers possibilities

as a facing material as well as flooring. It can be used on commercial and residential structures, both interior and exterior. Tile is available in a variety of color and texture patterns in 8, 12, and 16" squares. Custom designed tile can be produced in quantity orders.
AIA FILE NO. 23-N
MFR: TREVI-TILE OF CALIFORNIA
Circle 203 for further information

NON-LOAD BEARING INTERIOR PANEL PARTITIONS
MFR'S DESCRIPTION: use of panels made with wood shavings. Panels go up in one motion.
USES: interior non-load bearing partitions
SPECS/FEATURES: panels are designed for use with roof-truss construction that does not place a weight-load on the partitions themselves. This permits installation of an interior wall in one operation. Panel is placed into position on a simple floor track and raised to meet the ceiling. Another track on the ceiling permits fastening of panel in a simple nailing operation. Panels are connected to each other with wood blocks. Wall panels utilize joint cement and joint tape systems. Electrical installation is made easy by simply shoving conduit or wiring through the panels.
AIA FILE NO. 20-B-21
MFR: NATIONAL GYPSUM CO.
Circle 204 for further information

LIGHT WEIGHT, AIR SEALED PORTABLE PARTITIONS
MFR'S DESCRIPTION: light weight, portable interior walls with good sound retarding qualities.
USES: commercial interiors.
SPECS/FEATURES: key to new wall installation is the interchangeable filler panel. Each panel is 36" wide with heights up to 12'. Panel is set in position and air is added to the seal that raises the wall cap, a telescoping de-



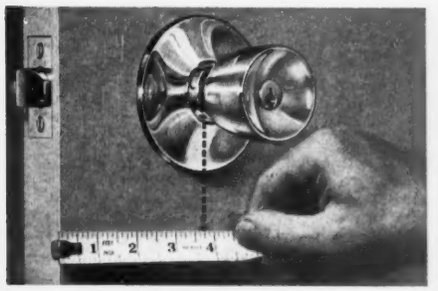
OPEN any door in San Francisco's newest skyscraper — the International Building—and you'll be in touch with Schlage's Tulip design lock in stainless steel installed with the modern full 3¾" backset.

Schlage recognizes that proper *backset* is a most important consideration for ease of operation and truly *panic-proof* installations. Schlage incorporates a full 3¾" backset in a *latch unit* that installs within the lock block. Architects have greater freedom of design and can be assured of ample space between knob and doorjamb.

Architects have *many* reasons for choosing Schlage. Beauty of design, durability of stainless steel, the staunch dependability of the cylindrical mechanism which Walter Schlage invented many years ago.

For commercial projects where door hardware must be beautiful — as well as of the highest quality—you're wise to specify Schlage on the modern 3¾" backset.

®SCHLAGE®
CYLINDRICAL LOCKS
Schlage Lock Company
San Francisco • Los Angeles • Chicago
New York • Vancouver, B.C.



Full 3¾" Backset Latch Units Throughout San Francisco's Newest Skyscraper

INTERNATIONAL BUILDING — SAN FRANCISCO
OWNERS: NATOMAS COMPANY
ARCHITECT: ANSHEN & ALLEN, AIA
GENERAL CONTRACTOR: DINWIDDIE CONSTRUCTION COMPANY
FINISH HARDWARE: E. M. HUNDLEY HARDWARE COMPANY

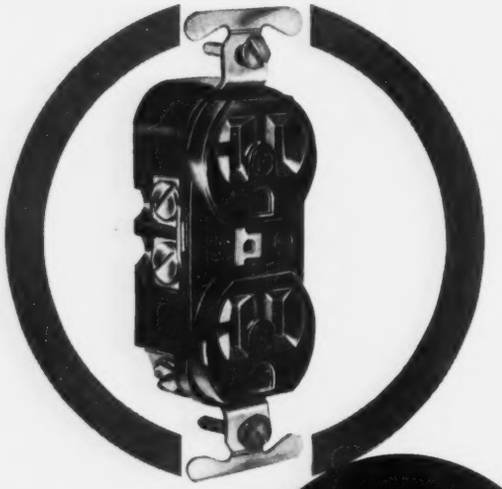
Circle 117 for further information

NEW

CIRCLE F

20-AMP

"U"-GROUND DEVICES



. . . Section 220-3 (b) of the 1959 National Electrical Code states . . .

"For the small appliance load in kitchen, laundry, pantry, dining room and breakfast room of dwelling occupancies, (1) 2 or more 20-ampere branch circuits in addition to the branch circuits specified in paragraph 220-3 (a) shall be provided for all receptacle outlets (other than outlets for clocks) in these rooms, and such circuits shall have no other outlets."

Designed to provide full compliance with the revised Code, Circle F's *new* No. 2532 does much more! It becomes a "universal" outlet! It accommodates appliances, heavy-duty portable tools, business machines, etc., having substantial energy requirements, where the new 20 A.-125 V. plug cap (No. 2528) is necessary. It also accommodates 15 A.-125 V. 3 wire U-ground and standard parallel blade caps. One outlet for all! Circle F's quality is tops and the price is right. Contact your Circle F representative for complete details.

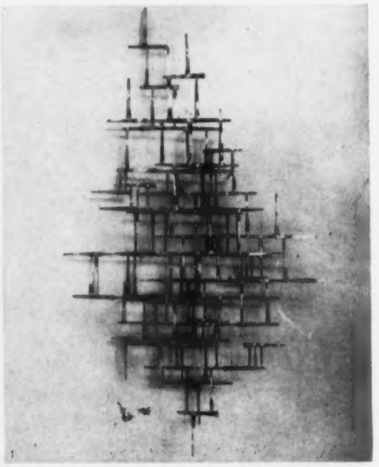
CIRCLE F MFG. CO.

TRENTON 4. NEW JERSEY

Circle 118 for further information

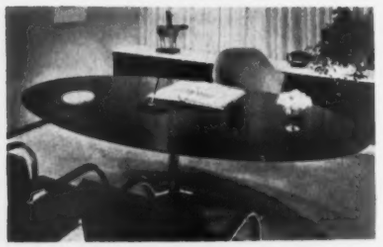
PRODUCTS, EQUIPMENT, MATERIALS

vice which locks panel in position. Filler panels are fitted with a tongue and groove so that when a series of panels is set in place they are locked together and provide a smooth, flush appearance. Walls may be finished with a variety of facing materials.
AIA FILE NO. 35-H-6
MFR: AIR WALL, INC.
Circle 205 for further information



CONTEMPORARY SCULPTURE FOR HOME AND OFFICE

MFR'S DESCRIPTION: custom designed or standard sculpture available.
USES: homes and offices
SPECS/FEATURES: sculptor offers architects specially designed sculpture or works from his standard collection. All work is of a contemporary design, of metal, either free-standing or hanging, and usually one-of-a-kind. Color can be added as a glaze on the surface by various methods of treatment including pigment preparations, and gold or silver foils.
AIA FILE NO. 15-R
MFR: THE SCULPTURE STUDIO
Circle 206 for further information



EXECUTIVE DESK FOR CONFERENCE USE

MFR'S DESCRIPTION: oval table-desk designed for executives whose work demands frequent conferences.
USES: executive offices.
SPECS/FEATURES: elliptical top is designed and shaped for practical office and small, informal conferences. Table-desk top is oiled rosewood, supported by a footed central column of highly polished chrome-finished steel. Matched storage cabinets in rosewood and steel with marble tops and other accessories are available.
AIA FILE NO. 28-A-1
MFR: KNOLL ASSOCIATES, INC.
Circle 207 for further information

OFFICE CHAIRS IN EIGHT MODELS

MFR'S DESCRIPTION: series of office chairs ranging from secretary to executive.
USES: commercial.
SPECS/FEATURES: seating units in series include executive chairs, with posture backs and fixed backs; one armchair and a secretarial chair.
AIA FILE NO. 28
MFR: ROYAL METAL MANUFACTURING CO.
Circle 208 for further information

SWITCH PLATES IN VARIOUS MATERIALS

MFR'S DESCRIPTION: new series of electrical switch plates and outlet covers.
USES: wall plates.
SPECS/FEATURES: wall plate finishes include solid copper, glazes, stainless steel, and various synthetic enamels. Templates were developed for use with tile installations in kitchens, and bathrooms, or as separate units in other parts of building. Nine different styles are available.
AIA FILE NO. 31-C-71
MFR: VIKON TILE CORP.
Circle 209 for further information

BEVERAGE DISPENSER FOR HOME IS PORTABLE

MFR'S DESCRIPTION: a home beverage dispenser.
USES: office/home refreshments.
SPECS/FEATURES: portable home dispenser designed for draft-beer is completely portable. Unit is guaranteed to keep a quarter-keg of draught beer fresh for up to 2 months.
AIA FILE NO. 30-F-6
MFR: HOME BEVERAGE DISPENSERS
Circle 210 for further information

WALLS/CEILINGS/FLOORS

WALL COVERING LINE FOR COMMERCIAL USE

MFR'S DESCRIPTION: new type of wall covering for surfacing in areas where durability and maintenance are important considerations.
USES: commercial and institutional.
SPECS/FEATURES: Each of three surface designs is produced in 20 colors which are keyed to go with metal

Circle 119 for further information about WESTERN PINE pp 37-40 →

A.I.A. NO. 19-E-6

DESIGN IDEAS using Western Pine Region paneling can give you dozens of *different* wall patterns with little or no increase in labor cost.

COLOR IDEAS using Western Pine Region paneling can give each home buyer a custom-color paneled wall at no more cost than painting a plaster or dry-wall installation.

. . . SEE INSIDE For paneling designs and color effects that give homes and commercial installations that valuable "custom" look.

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A.I.A. NO. 19-E-6

WESTERN PINE PANELING WELCOMES ALL COLORS

The remarkable ability of Western Pine Region woods to take all types of finish treatments permits a variety of color or shading that cannot be matched in any other paneling.

Modern tints of reds, blues, greens . . . *traditional* browns and tans . . . any color may be used to give a decorative touch to lumber paneling, while retaining the beauty and warmth of the natural wood grain.

HOW TO COLOR STAIN

The important feature is to apply pastel tones in a thin wash to give color, yet allow the natural grain to show through. Use a thinned white undercoat paint to which has been added a color-in-oil of the desired shade. The thinner the undercoat, the sharper the grain pattern.

Brush on the tinted undercoat, then wipe off with a soft cloth. Let dry. This finishes the paneling. If desired, to give greater protection, bring out the grain and make the color sparkle, it may be waxed or given a clear varnish or lacquer topcoat.

For more detailed information on other lovely finishes, bleaches and stains which may be applied to Western Pine Region woods, write for "Installing and Coloring Your Walls," Dept. BI-461, Western Pine Association, Yeon Bldg., Portland 4, Oregon.

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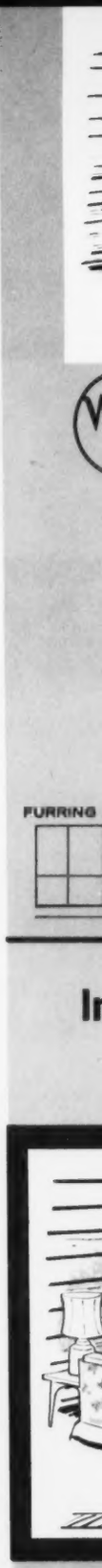
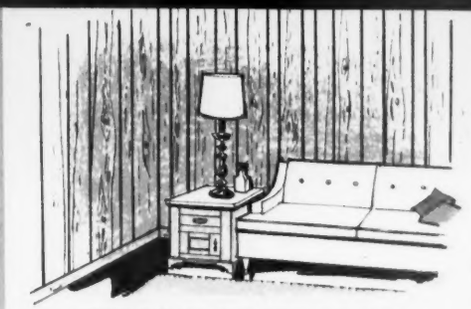


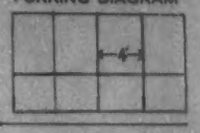
HORIZONTAL *Nails direct to studs without furring strips. Use uniform or random widths.*



VERTICAL *Pattern attractive in low-ceiling rooms. Use either uniform or random widths.*

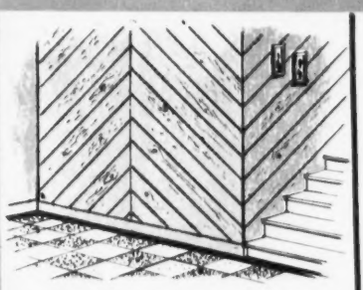
HERRINGBONE-HORIZONTAL
For the owner who likes something different. Uniform widths are recommended.

FURRING DIAGRAM

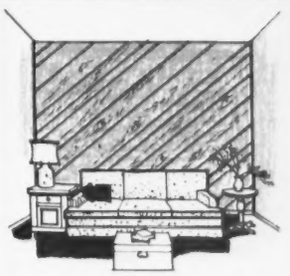


Paneling inspires installation variety

Each of these design ideas can be achieved with a single paneling pattern. You can order one standard pattern in volume, yet "custom design" to the customer.

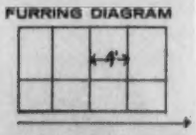


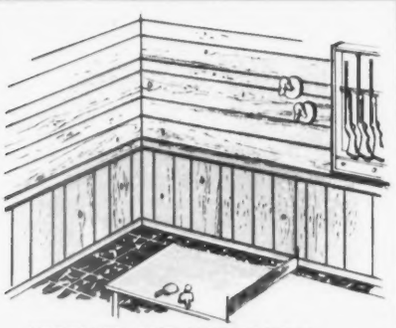
HERRINGBONE *No furring needed. Uses short, long pieces. Uniform widths recommended.*



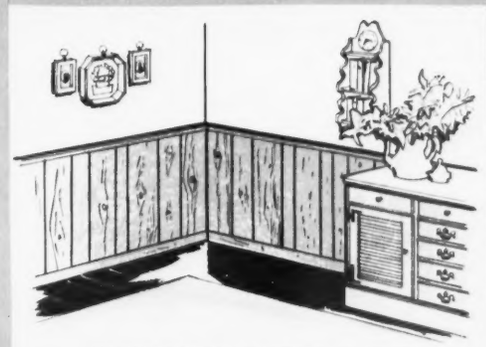
ANGLE-WALL *Looks best on a single accent wall. Needs no furring. Uses short, long pieces.*

FURRING DIAGRAM



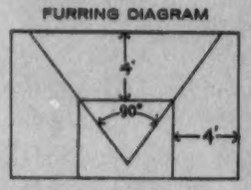


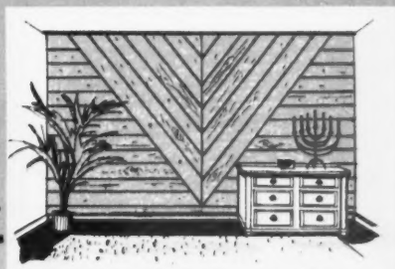
VERTICAL AND HORIZONTAL
Utilizes short and long lengths. May be reversed, wainscoting laid horizontally.



WAINSCOT *Gives durability on lower walls where abrasion is most likely to occur.*

FURRING DIAGRAM

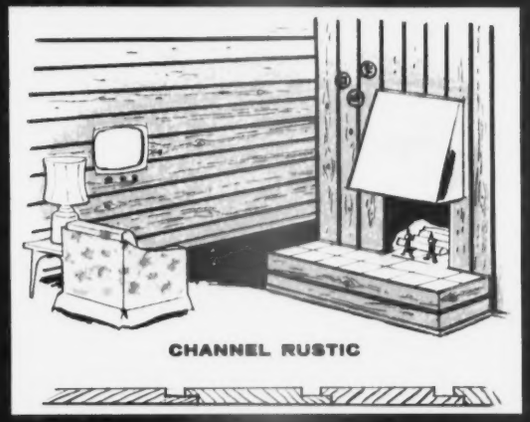




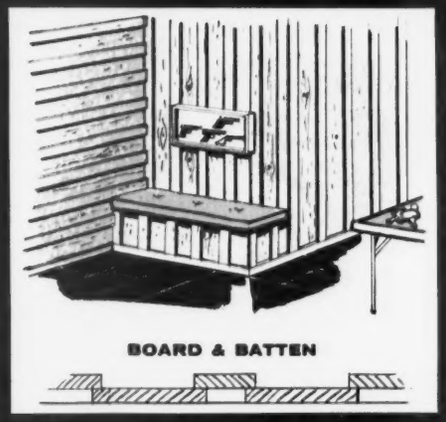
RIGHT ANGLE *Unusual pattern, easy to install. Uses short and long pieces, uniform or random widths.*

Installed wall designs using WPA Exterior Siding Styles as Paneling

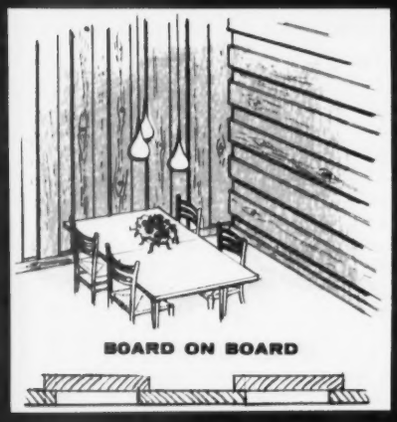
An architect-conceived idea that couples economy with a truly unique, beautiful effect. May be used smooth side exposed or rough-sawn side exposed.



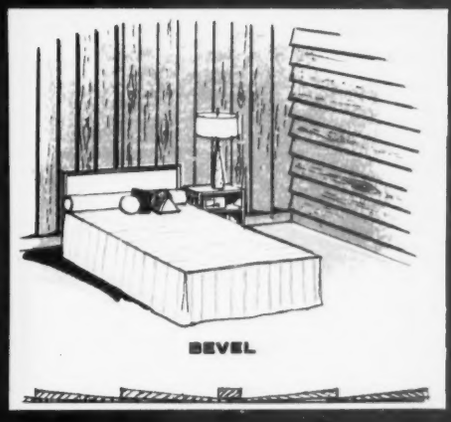
CHANNEL RUSTIC



BOARD & BATTEN



BOARD ON BOARD



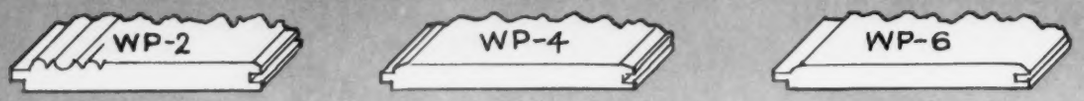
BEVEL

WESTERN PINE ASSOCIATION

IDAHO WHITE PINE • PONDEROSA PINE • SUGAR PINE
LODGEPOLE PINE • DOUGLAS FIR • WHITE FIR • LARCH
ENGELMANN SPRUCE • INCENSE CEDAR • RED CEDAR

WESTERN PINE REGION PANELING

MOST POPULAR AVAILABLE PATTERNS



14 other patterns are also available. For list of patterns, write for "Western Pine Paneling Patterns."

SPECIES

	SPECIES	COLOR	CHARACTERISTICS
Light colored woods	PONDEROSA PINE	Creamy white to deep straw	Knots generally smooth, small to large in size. Gentle, straight grain with sharp contrast between knots and wood.
	IDAHO WHITE PINE	Creamy white to pale, reddish brown	Characteristic red knots, small to medium, neatly patterned, in sharp contrast to smooth, light grain.
	SUGAR PINE	Creamy white to pale, reddish brown.	Subdued grain often has light brown flecks. Knots are small to large, with reddish color that contrasts sharply with light grain.
	LODGEPOLE PINE	Creamy white to deep straw	Lightly distinct grain. Slow, even growth. Small tight knots well distributed. Knots softly contrast with wood.
	WHITE FIR	Flat white or "oyster" white	Grain is subdued, not pronounced. Knots are also light, blend in with over-all color, are medium in size.
	ENGELMANN SPRUCE	Whitest of the woods	Very subdued grain, hardly discernible. Knots are small, light in color and blend with wood.
Darker woods	DOUGLAS FIR	Orange-red to brown	Very distinct grain. Knots medium, blend with wood color. A very hard, abrasion resistant wood ideal for wainscots, playrooms, etc.
	LARCH	Russet Brown, waxy appearance	Distinct, interesting grain pattern. Knots blend with wood color. A hard, abrasion resistant wood ideal for wainscots, playrooms, etc.
	RED CEDAR INCENSE CEDAR	Varies from dark reddish brown (heartwood) to light cream (sapwood)	Very decorative wood with fairly distinct, beautiful grain. Knots are medium to large, distinct. Often installed unfinished with only a wax coat finish.

SIZES

WIDTHS	LENGTHS	THICKNESSES
Nominal Widths: 4", 6", 8", 10", 12" Actual face widths 1/8" less than nominal in T & G patterns, 1" less than nominal in shiplap patterns.	From 6' to 16' in multiples of 1' or 2'	Nominal: 1" Dressed to 25/32"

GRADES

KNOTTY GRADES	SELECT (CLEAR) GRADES
No. 2 Common Selected for Paneling: Premium knotty paneling grade. Emphasis on top quality appearance and exceptionally smooth milling surface. **No. 3 Common Selected for Paneling:** Same as above. Allows more pronounced knots and growth characteristics. **No. 1 Common:** Excellent quality, Limited availability . . . usually combined with next lower grade. **No. 2 Common:** Good quality, most commonly used grade. Knots sound, generally smooth, larger than in No. 1 Common. **No. 3 Common:** Low cost, good value. Knots larger than above two grades. Some trimming may be required in application.	**B. & Btr.:** Top grade of clear paneling. Limited availability. **C Select:** Very high quality grade, permitting a few small tight knots, other minor characteristics. May be ordered combined with B & Btr. as "C Select & Btr." **D Select:** Smooth scattered knots and other characteristics. Good quality paint finish surface. May be ordered combined with above two grades as "D Select & Btr."

WP MOULDINGS

Mouldings in a wide variety of patterns and in any species to match the paneling used are readily available at any building supply dealer's.

GRADING PRACTICES of Western Pine Association member mills are closely supervised by the Association to assure outstanding uniformity. The WPA grading rules and supervision make Western Pine Region lumber products of integrity and dependability.

WESTERN PINE ASSOCIATION

Yeon Bldg., Portland 4, Oregon

WPA

FRAMING • SHEATHING & SHEETBOARD • SIDING • DECKING • PANELING
MOULDINGS • FINISH • MILLWORK

Tear off here for filing

partitions, office, school, and hospital equipment. Surface textures available are suede, knobby and striated. The three patterns were selected from among several prototypes by 250 architects. Wall covering is available in sheets 54" wide in .030" and .040" gauges. Wall covering is designed to resist fading or staining and is easier to clean than most other wall coverings, according to manufacturer.

AIA FILE NO. 28-C

MFR: ARMSTRONG CORK CO.

Circle 211 for further information

ALUMINUM BATTEN SYSTEM MECHANICALLY FASTENED

MFR'S DESCRIPTION: aluminum batten sidewall system.

USES: prefabricated sidewalls.

SPECS/FEATURES: woodgrain embossed aluminum sheet is 4' wide and height of wall. At the construction site, clips are attached over sheet at each joint. Then roll formed battens, also woodgrain embossed and prepainted, are snapped on over all clips. System includes all accessories—skirt boards, inside and outside corners and window trim. System is available in white, but other colors, including green, gray and maroon, are to be added.

AIA FILE NO. 17-A

MFR: REYNOLDS METALS CO.

Circle 212 for further information

NEW EMBELLISHMENT IN FLOOR TILE LINE

MFR'S DESCRIPTION: addition of new embellishment in a line of vinyl asbestos tile.

USES: decorative flooring.

SPECS/FEATURES: new decoration features complete penetration of soft tone on tone colors in a controlled chip design. Offered in a choice of ten colors.

AIA FILE NO. 23-G

MFR: CONGOLEUM-NAIRN INC.

Circle 213 for further information

HARDBOARD PANELING IN NEW DECKING SYSTEM

MFR'S DESCRIPTION: new decking system utilizing V-grooved hardboard panels.

USES: decking.

SPECS/FEATURES: decking system is 5/16" V-grooved hardboard panels for use with 2"x2" framing members spaced 8" o. c. Hardboard panels are fastened with steel annular nails. Surface of panels are scored with V-grooves spaced 4" o. c. 1/8" diameter holes can be drilled 24" apart in grooves to provide drainage. Edges of panel are beveled and form a full depth V-groove at joint when panels are butted together. Paneling can be finished with exterior paint or stain. System was designed by Paul H. Kirk FAIA.

AIA FILE NO. 19-E-6

MFR: SILVATEK DIV., WEYERHAEUSER CO.

Circle 214 for further information

STEEL FLOOR DECK FOR REINFORCED CONCRETE

MFR'S DESCRIPTION: steel floor deck provides concrete reinforcement without bars, serves as a permanent form.

USES: concrete construction.

SPECS/FEATURES: system eliminates separate bars, forms and shoring. Designed for saving time, steel decking acts as a working platform when installed. Reinforcing strength of decking is provided by raised lugs formed into the webs of the panels. Lugs serve same purpose in slabs as does deformation in regular steel reinforcing bars, according to manufacturer. Decking available in most regular deck profiles and as a cellular steel floor.

AIA FILE NO. 17-A

MFR: INLAND STEEL PRODUCTS CO.

Circle 215 for further information

PLASTIC PANELS FOR EXTERIOR USE

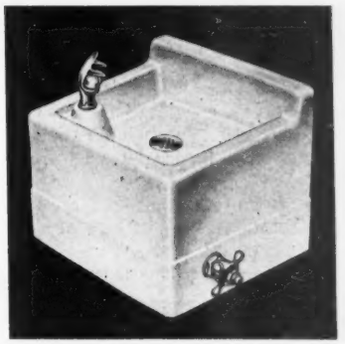
MFR'S DESCRIPTION: reinforced translucent plastic panels.

USES: exterior applications.

SPECS/FEATURES: panels, made in both flat sheet and sandwich form, are designed for exceptional resistance to weathering. Flat sheet panels available in 20 colors plus white, in

Circle 119 for further information about WESTERN PINE pp 37-40

HAWS Model 7X

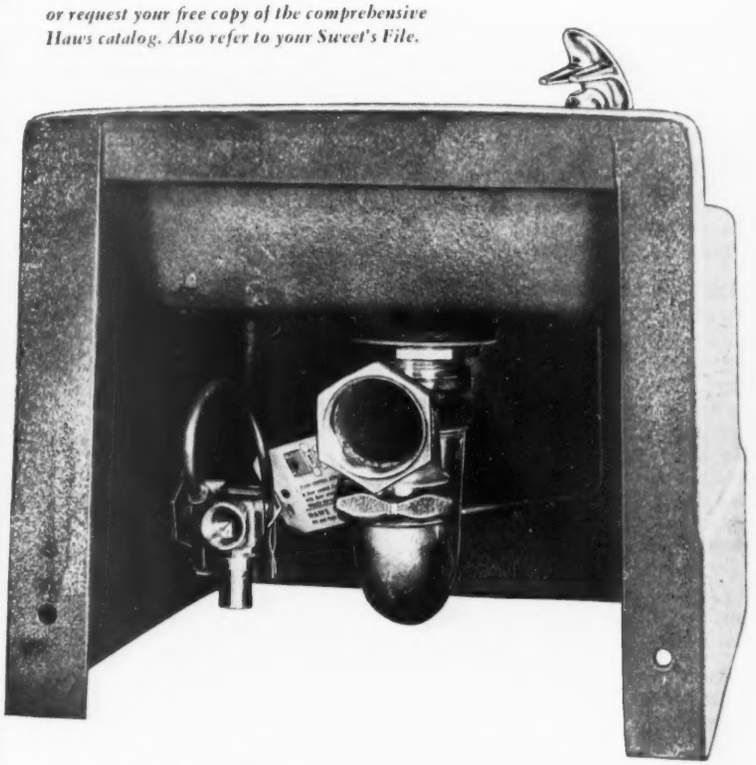


RUGGED

Look at the *back* of this rugged HAWS fountain! The sturdy cast iron body is gripped in a thick shell of smooth porcelain enamel—impervious to weather extremes, corrosion, *even acids!* That's why HAWS Model 7X is the ideal specification for outdoor areas, industrial and chemical plants throughout the world! And good looking, too! This popular model matches anything on the market for sheer streamlined beauty. Get ruggedness with style. Specify HAWS!

WRITE FOR DETAILED SPECS

or request your free copy of the comprehensive Haws catalog. Also refer to your Sweet's File.



Since 1909 HAWS **DRINKING FOUNTAINS**

products of

HAWS DRINKING FAUCET COMPANY

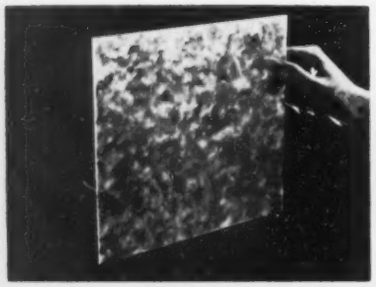
1441 Fourth Street, Berkeley 10, California

Export Dept.: 19 Columbus Ave., San Francisco 11, California

Circle 120 for further information

PRODUCTS, EQUIPMENT, MATERIALS

sizes to 4'x10'. Sandwich panels are made in five basic patterns in the same size range.
AIA FILE NO. 12-A
MFR: NAUGATUCK CHEMICAL DIV., U. S. RUBBER CO.
Circle 216 for further information



VINYL FLOOR TILE IN LUXURY DESIGN

MFR'S DESCRIPTION: a luxury styled vinyl flooring tile.
USES: residential, commercial and institutional.
SPECS/FEATURES: vinyl tile resembles deep-quarried marble and embodies translucent, transparent and opaque vinyls, manufacturer says. It is non-directional in design. Suitable for use on-, above- or below grade, tile is available in 9"x9" and 12"x12" sizes. Special sizes up to 36"x36" are available. All sizes are made in ⅛" gauge. Eight patterns are available.
AIA FILE NO. 23-G
MFRS: ARMSTRONG CORK CO.
Circle 217 for further information

WALL COVERINGS OF VINYL FABRIC

MFR'S DESCRIPTION: a new collection of vinyl fabric wall coverings.
USES: interior wall coverings.
SPECS/FEATURES: a new collection of vinyl fabric wall coverings contains over 240 items including deeply embossed textures, new colors and a wide variety of weave designs, according to manufacturer. Material is offered in 27" width, 5⅓ yard rolls.
AIA FILE NO. 28-C
MFR: COLUMBUS COATED FABRICS CORP.
Circle 218 for further information

GYPSUM WALLBOARD WITH VINYL COATING

MFR'S DESCRIPTION: laminated vinyl coating now available on gypsum wallboard.
USES: interior walls.
SPECS/FEATURES: eight colors and two woodgrain patterns are integrally blended into laminate to help give a non-fading, washable surface, ac-

Circle 121 for further information →

New...from CECO
Aluminum windows and curtainwalls
with double-hung, single-hung or fixed windows

At last, here's a curtainwall that permits imaginative building design—enabling the architect to create a "character unto itself" for each building. And the components are of heavier-than-average aluminum, of custom manufacture. They can be anodized in Ceco's new, large-unit Alumiliting plant, the most modern in America. They are practical and reasonably priced, made so through design engineering.

This new series (160 for double-hung windows, and 165 for single-hung) means erection speed for the architect and contractor, and minimum maintenance for the building owner. Here are some of the reasons why:

- Sleeving mullions are an integral part of each unit . . . conventional mullions are not needed. This new product permits shadow-line construction at low cost, while providing the same strength as add-on mullions. Material and labor costs are reduced. Available in large units, easy to erect.
- Double-contact weather stripping on vertical and horizontal sections of operating sash give maximum protection from air and dirt. For minimum maintenance, windows can be furnished with inside bead glazing. This facilitates replacement of broken glass . . . from inside the building.
- There are no projections with double-hung, single-hung or fixed windows. Windows of this type are ideal for ground level exteriors.
- Panels of porcelain, ceramic, plastic, steel or stone can be used in several depths without modification of the curtainwall elements, offering the architect creative freedom. This feature allows use of thin panels when back-up walls are required, and thicker panels to satisfy U values without back-up walls.
- To maintain a neat exterior face, all window frames are designed with offsets so exterior screens can be inserted flush with the surface of the curtainwall.

Use this coupon for additional information

Just Published!... descriptive folder, along with specifications and prints detailing Ceco series 160 D/H and 165 S/H aluminum and steel curtainwalls.

CECO Steel Products Corporation

5601 West 26th Street, Chicago 50, Illinois

☐ *Please send folder and prints detailing Ceco Series 160 and 165 aluminum windows and curtainwalls.*

☐ *Please have Ceco engineer get in touch with me.*

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FIRM _____

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AEN

curtainwalls, windows, screens • hollow metal doors • steelforms • rebars • steel joists • steel buildings • roofing products • metal lath

Total Manufacturing for the Building Industry from Raw to Finished Products

PRODUCTS, EQUIPMENT, MATERIALS

cording to manufacturer. Vinyl-coated wallboard is available in 3/8" thick, 4' panels in 8' and 10' lengths. Beveled edges may be left exposed.
AIA FILE NO. 23-L
MFR: U. S. GYPSUM CO.
Circle 219 for further information

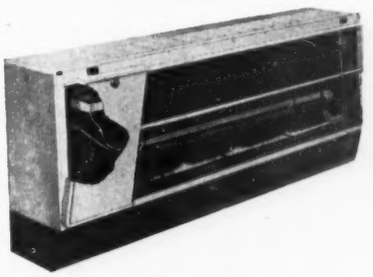
FLAME SPREAD RATING CUT IN CEILING TILE

MFR'S DESCRIPTION: woodfiber acoustical ceiling tile flame spread ratings now comparable to incombustible mineral tile.
USES: meeting fire regulations with use of woodfiber tile.
SPECS/FEATURES: a new manufacturing process impregnates woodfiber ceiling tile with fire-proofing chemicals. This feature is now available in a line of ceiling tile textures and two perforated patterns. Manufacturer states product costs approximately 1/3 less than incombustible tile.
AIA FILE NO. 17-A
MFR: SIMPSON TIMBER CO.
Circle 220 for further information

CONCRETE FLOOR PROTECTION

MFR'S DESCRIPTION: liquid densifying treatment.
USES: protecting concrete floors.
SPECS/FEATURES: material is said to penetrate deeply into surface capillaries and crystallize to assure structural density. Treated surfaces are claimed to breathe and permit water vapor transmission. Helps prevent chemical damage on concrete by vegetable and animal oils, coal tar distillates and dilute water solutions.
AIA FILE NO. 3-A
MFR: MAINTENANCE, INC.
Circle 221 for further information

HVAC

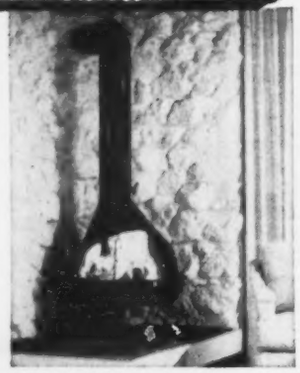


CABINET UNIT HEATERS WITH 136 MODELS IN SERIES

MFR'S DESCRIPTION: a broad new line of cabinet unit heaters.
USES: commercial, institutional and public buildings.

← **Circle 121 for further information**

3 FIREPLACES FOR COMFORT FOR BEAUTY



FireHood

A conical metal fireplace with free-flowing, functional lines that is in keeping with today's contemporary lines. Available in 9 Western tones. For new homes, modernizing, motels and vacation cabins.

FIRE Hearth

DIVIDER WALL

Combined into a handsome unit is this effective fireplace and the decorative shelves. Modular-type construction enables you to expand to any sized opening. Installs quickly from floor through roof without masonry.

FIRE Hearth

Available in free-standing or wall-fastened models to meet the demand for fireplaces in new homes or add to a present dwelling. Full 30" capacity in fire box. Enhances any living, family or recreation room.

Write for FREE Color Folder...

CONDON-KING COMPANY, INC.

1247 Rainier Avenue • Seattle 44, Washington

Circle 122 for further information

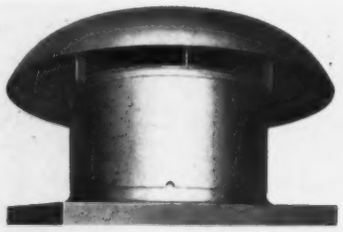
PRODUCTS, EQUIPMENT, MATERIALS

SPECS/FEATURES: in addition to free-standing units, there are models for mounting on walls or ceilings and for recessed installations. Units are available with either automatic or manual controls for use with hot water or steam systems. With use of optional equipment, units can be used to ventilate with outside air. Air delivery capacities range from 250 to 2,000 cfm.

AIA FILE NO. 30-B

MFR: MODINE MANUFACTURING CO.

Circle 222 for further information



LOW SILHOUETTE ROOF VENTILATOR

MFR'S DESCRIPTION: new mushroom-head roof ventilator.

USES: commercial and industrial roof top ventilating systems.

SPECS/FEATURES: manufacturer says new ventilator was designed to meet a need for a completely rain-proof low silhouette roof unit. Ventilator is available in 24", 28", and 48" heights, with selection of fans varying in each size. Accessories available include wire-mesh bird-screens and manual or motor-operated shutters.

AIA FILE NO. 30-D-1

MFR: HARTZELL PROPELLER FAN CO.

Circle 223 for further information

LOW SILHOUETTE DESIGN FOR HEAVY AIR CONDITIONERS

MFR'S DESCRIPTION: two models of remote air-cooled condensing units added to manufacturer's line of commercial air conditioners.

HOME OF THE SAN FRANCISCO GIANTS

John S. Bolles, Architect E. Elmore Hutchison, Engineer

All 33 Front Doors at Candlestick Park Are Cookson...the Stronger Rolling Doors with the Compatible Architectural Look

Agreed that greater strength gives greater protection – against rough use, wind, weather, unauthorized entry, damage of any kind. That's why Cookson uses thick galvanized copper-bearing steel curtain slats of heavier gauge than most others, with deeper corrugations for added rigidity; and why Cookson has engineered its doors to resist a wind-load of 20 lbs. per square foot! Pure ruggedness is built into every other part, too, from the thick steel plate brackets to the continuous steel angle guides. Whatever the punishment, greater strength Cookson Doors can take it.

They're easier to operate than most other doors, too. It actually takes 35% to 65% less effort to open or close a Cookson Door, because the barrel is supported by and rotates on grease-sealed ball bearings, and the oil tempered torsion springs are designed for the *individual* door, providing the correct counter-balancing force.

Whether you specify motor, chain or crank operation, you'll find Cookson Doors the smoothest to operate, the least expensive to maintain, the best looking to live with, year in and year out. See our catalog in Sweet's, or write for a copy. The Cookson Company, 1525 Cortland Avenue, San Francisco 10, Calif. Sales and service in principal cities.

COOKSON

COOKSON

ROLLING DOORS • FIRE DOORS • GRILLES • COUNTER DOORS • WOOD COILING PARTITIONS

Circle 123 for further information

USES: commercial and industrial roof-top air conditioning installations.

SPECS/FEATURES: respectively, capacities in two models are 90,000 and 118,000 BTU/hr. Overall height is approximately 51". Condenser coil is mounted horizontal to decrease height. Weatherproof casing is heavy aluminum reinforced with steel. Weights are 800 and 1100 lbs. Installation is simplified by shipment in two sections. Choice of fan-coil units or horizontal air-flow coils is offered.

AIA FILE NO. 30-F-3

MFR: DAY & NIGHT MANUFACTURING CO.

Circle 224 for further information

50-GALLON WATER HEATER FOR COMMERCIAL USES

MFR'S DESCRIPTION: water heater designed for use where hot water is in continuous demand.

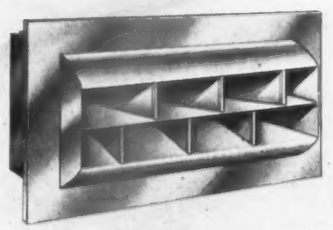
USES: commercial and industrial.

SPECS/FEATURES: water heater is specifically designed for 180°F commercial and industrial applications and operates on natural, propane and butane gases with BTU/hr input of 50,000 for natural gas and 33,000 for L.P. gas. Burner is guaranteed for life of heater; has no port or venturi, and is designed to withstand extremely high temperatures. Water heater is available in either a galvanized or glass-lined tank.

AIA FILE NO. 29-D-2

MFR: W. L. JACKSON MANUFACTURING CO., INC.

Circle 225 for further information



HVAC DIFFUSERS IN EXTRUDED ALUMINUM

MFR'S DESCRIPTION: heating and cooling extruded aluminum cylinder-type diffusers.

USES: large interior application.

SPECS/FEATURES: designed specifically for large areas where long projection of air or modulated diffusion is required. Design incorporates a rotary cylinder and split diffusing vanes. Cylinder can be adjusted for upward, downward or "straight out" projection. Split diffusing vanes can be adjusted for air direction flows. Can be installed in a horizontal or vertical position.

AIA FILE NO. 30-J

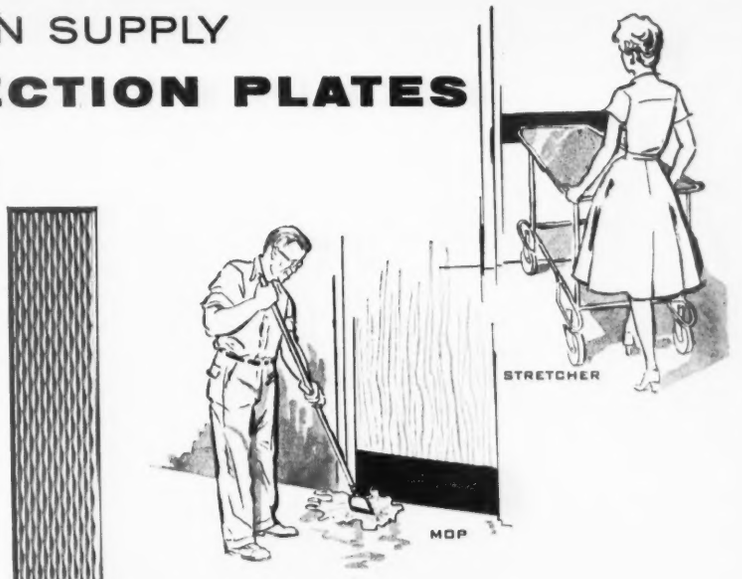
MFR: AIR DEVICES, INC.

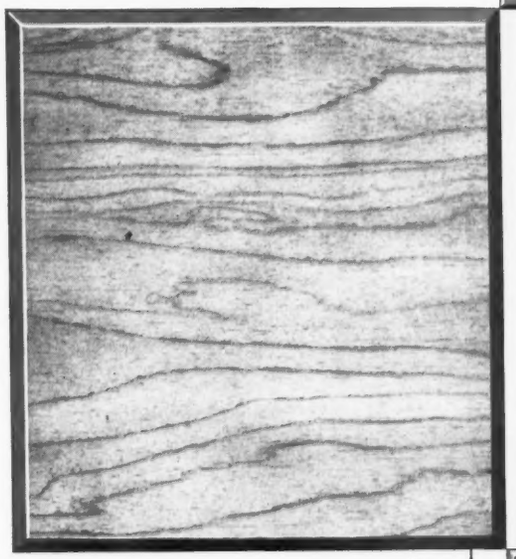
Circle 226 for further information

CIPCO CAN SUPPLY

DOOR PROTECTION PLATES

to solve any traffic problem inexpensively



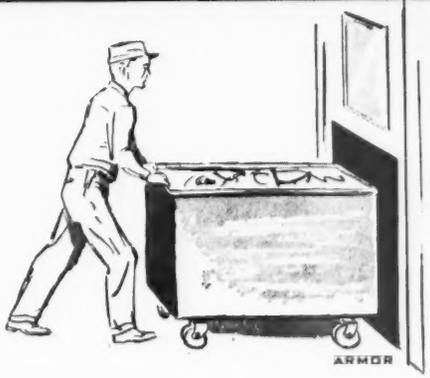


Designers of Contemporary architectural entrances have created a need for attractive, colorful but still practical door protection plates.

Cipco meets this need by offering you a complete line — in various styles, sizes, types and colors — in plain or patterned metals and plastic.

Packaged individually and clearly marked with Catalog Number, size and finish, Cipco includes rust-resistant Stainless Steel screws which can be used in any type of door — metal or wood.

For complete information on Door Protection Plates, Door Edgings or any of the complete line of Cipco-built architectural hardware, write.



SEE US IN MIAMI BEACH BOOTH 11

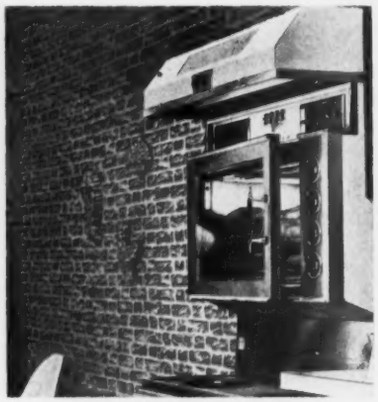
October 16-18th 1961

CIPCO CORPORATION
2204 COLE STREET
ST. LOUIS 6, MO.

Circle 124 for further information

figure
QUALITY
WATER
FIXTURES
in your kitchen plans...to add up to
MORE LASTING PERFORMANCE
BETTER SANITATION
GREATER ECONOMIES
You know T&S quality when you see it and heft it...and mostly when it's at work for you from one end of the kitchen to the other. Why "water down" your kitchen efficiency? Specify T&S stream-mated, quality-built water fixtures and be sure of the finest, longest lasting, most trouble-free units for your new or remodeled water service layouts.
B-113 PRE-RINSE
The most efficient pre-cleaning unit on the market; never improved upon except by its maker. Versatile fixture for cleaning dishes, silver, cans and washing machines, rinsing pots, spraying vegetables, and final rinse sterilizing.
B-180 KETTLE KADDY
Makes filling and rinsing of steam kettles an easy, rapid chore. Free-standing combination kettle filler spout and spray stanchion. D.J. filling spout has on-and-off control and volume control on spout tip. Models available with flexible filler hose, vacuum breakers, and for Hot, Cold or mixed services.
Free to architects and food facility engineers
T&S SPECIFICATION MANUAL...
A complete planning book of plumbing fixtures and specialties for institutional and commercial kitchens.
See your dealer or write for Product Bulletins on:
PRE-RINSE • GLASS FILLERS • WATER STATIONS • FAUCETS
PEDAL VALVES AND SERVICE FITTINGS • POT FILLERS
KETTLE KADDIES • SPRAY HOSES • ACCESSORIES
LAB-FLO LABORATORY SERVICE FIXTURES
T&S BRASS & BRONZE WORKS, INC.
128 MAGNOLIA AVE., WESTBURY, L.I., N.Y.
Telephone: EDgewood 4-5104
Circle 125 for further information

PRODUCTS, EQUIPMENT, MATERIALS

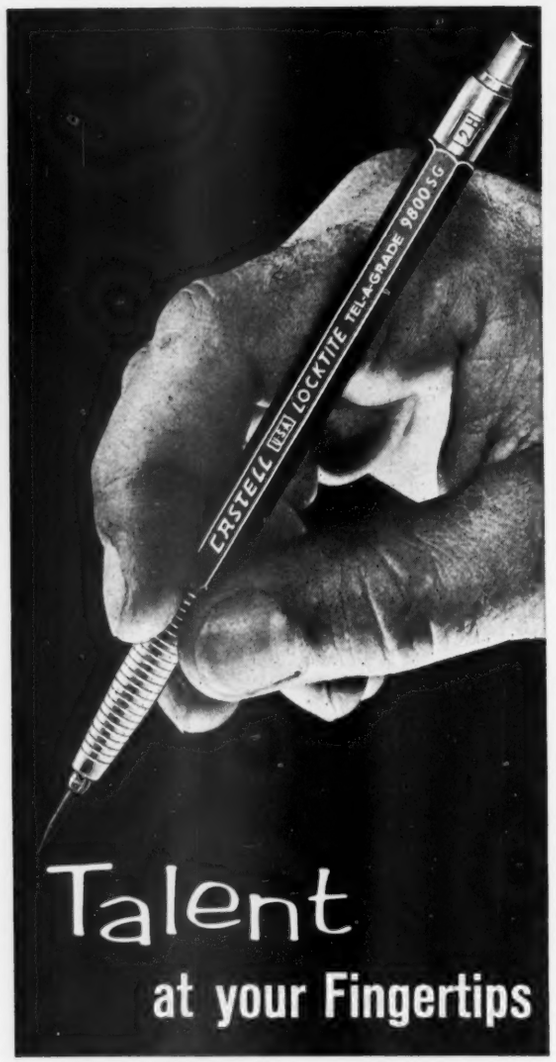


ROLL-OUT NON-DUCT HOOD FOR BUILT-IN RANGES

MFR'S DESCRIPTION: non-duct hood designed as companion unit for oven-over-burner ranges.
USES: residential.
SPECS/FEATURES: non-duct hood has aluminum grease filter and activated charcoal filter which recirculates air in kitchen. Hood glides back flush with control panel when not in use. Unit has four-button control and a quiet fan. It is available in white, silvertone, stainless steel, and standard range colors for 30" and 40" ranges.
AIA FILE NO. 30-D-3
MFR: MAJOR INDUSTRIES, INC.
Circle 227 for further information

SMALL FURNACES FOR TIGHT SPACES

MFR'S DESCRIPTION: eight compact gas-fired horizontal furnaces.
USES: installation in small areas.
SPECS/FEATURES: furnace dimensions are 19⅝" x 27⅞" x 42½". Weights range from 120 to 200 lbs. Btu/hr range from 80,000 to 125,000. Some models can also be used in combination with cooling systems.
AIA FILE NO. 30-B
MFR: CARRIER CORP.
Circle 228 for further information



We are talking to a special breed of men who have their feet on the ground and their eyes on the stars ■ You have already come part way ■ There are more years of striving ahead—and then the pinnacle ■ If you are like other masters in your profession, your #9800 SG **Locktite** Tel-A-Grade Lead Holder will accompany you all the way to the top ■ Because **Locktite** becomes a part of your creative process ■ Its no-slip, functional grip with special serrations gives you smooth traction —and blessed comfort to your fingers ■ You like the bulldog clutch and the unique indicator that reveals the degree in use at a glance ■ You haven't had to use the ironclad 2-year guarantee—but you know it's there . . . that if any part of your **Locktite** Tel-A-Grade breaks in normal use, **A.W.Faber** will replace the entire holder without cost ■ Happy voyage—to you and **Locktite!** ■ **Castell Drawing Leads #9030,** *identical in grade and quality with world-famous Castell drawing pencil ■ Usable in all standard holders, but perfect for Locktite ■ 7B to 10H, and a kaleidoscope of colors ■ Draws perfectly on all surfaces, including Cronar and Mylar base Films* ■
A.W.FABER-CASTELL
Pencil Co., Inc., Newark 3, N. J.
Our Bicentennial year—1761-1961
200 years of uninterrupted manufacturing experience.

Circle 126 for further information

SPEAKMAN®
FLUSH VALVES

SI-FLO® and DIAMOND

easier to install
easier to adjust

1. An exclusive adjustable threaded connection between valve body and stop corrects roughing variations up to ¾", simplifies installation, and lowers material and labor costs.
2. External flush adjustment simplifies regulation, gives exact flow rate required.
3. Compact piston unit is only moving part—easy and inexpensive to replace.
4. Non-hold-open handle closes valve automatically when flushing cycle is completed.
5. Non-metallic renewable seat resists corrosive action of mineral waters.

Write for illustrated folder S-74-A

SPEAKMAN COMPANY
WILMINGTON 99, DELAWARE
In Canada write CUTHBERT-SPEAKMAN, Montreal 3, Canada

Circle 127 for further information

new floors OVERNIGHT! ready for Heavy Traffic with

STA-CRETE
epoxy resins

Maintenance men specify **STA-CRETE** to solve hundreds of maintenance problems. Practically indestructible. **STRONGER THAN CONCRETE. STA-CRETE** epoxies are the solutions for repairing, resurfacing, patching, bonding, strengthening, water-proofing, and just plain wear and tear problems. Economical and easy to handle. Use only what you need; your supply will never deteriorate. Surface ready for heavy traffic overnight.

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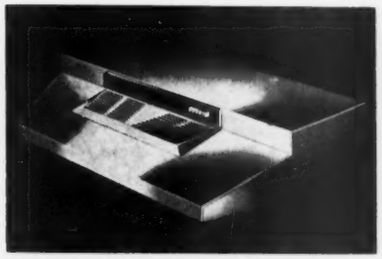
for
Industry
Agriculture
Warehouses
Office Buildings
Institutions
Refineries
Plants
Highways

Circle 128 for further information

PRODUCTS, EQUIPMENT, MATERIALS



VENTLESS RANGE HOOD WITH TWO FILTERS

MFR'S DESCRIPTION: latest addition to a line of range hoods.
USES: residential kitchens.
SPECS/FEATURES: hood requires no vent work, has two filters; an aluminum filter to trap grease, and a charcoal filter to remove smoke and odors and help purify kitchen air. Product has a 3-speed turbo-fan impeller unit, plenum housing and fluorescent lighting. Hood is 21" deep, with a choice of 8 widths and colors.
AIA FILE NO. 30-D-1
MFR: SWANSON MANUFACTURING CO.
Circle 229 for further information

FORCED CONVECTION ELECTRIC WALL HEATER

MFR'S DESCRIPTION: a new high-capacity forced-convection wall heater.
USES: homes and small offices.
SPECS/FEATURES: automatic thermostat has separate selector dial from the on-off switch and is enclosed in cool air intake to help prevent interaction with heating element. Warm air is forced around heating element by a low-speed fan. A thermal overload device cuts off heating element in case of obstructed air flow. Heater cover is gray enamel frame with off-white enamel grille.
AIA FILE NO. 31-K-3
MFR: GENERAL ELECTRIC CO.
Circle 230 for further information

OFFICE AIDS

REDESIGNED LINE OF WHITEPRINTERS

MFR'S DESCRIPTION: two table top whiteprinters redesigned.
USES: drawing reproductions.
SPECS/FEATURES: faster printing speed and increased exposure light are features of line of redesigned whiteprinters for use by architects and engineers. Machines come in a heavy gauge sheet metal with two-tone finish. A matching stand, available as an optional extra, has storage space for paper. Machines operate on

STAIN . . . OR PAINT?

Architect: Pietro Belluschi, Cambridge, Mass.
Builder: Eichler Homes, Palo Alto, Cal.
Cabot's Stains on exterior & interior

To answer this question, an architect weighs the advantages and limitations of each against the job at hand . . . effect, durability, and cost on wood surfaces inside and outside the home. Cabot's Stains, for example, answered all requirements for the home above. Here are the reasons for today's architect-led trend toward stains:

Cabot's STAINS

- **Economical — ½ the cost of paints.**
- **Trouble-free — no cracking, blistering, or peeling.**
- **Offer unique color effects in a wide color range.**
- **Grow old gracefully, may be stained or painted over later.**
- **Penetrate deeply, dyeing and preserving the wood fibers.**
- **Enhance the beauty of the wood grain; leave no brush marks.**
- **Require no priming coat; are easier to apply and maintain.**
- **Need no thinning; surfaces need no scraping or sanding.**

For best results, the best in Stains . . . Cabot's Oil-base or Creosote Stains.

SAMUEL CABOT INC.,
991 South Terminal Trust Bldg., Boston 10, Mass.
Please send color cards on Cabot's Stains.

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Circle 129 for further information

how to Observe without being Seen

USAF Aerospace Medical Center, Brooks Air Force Base, San Antonio, Texas

From the darkened observation room, it's a window...

From brighter examination room, it's a mirror!

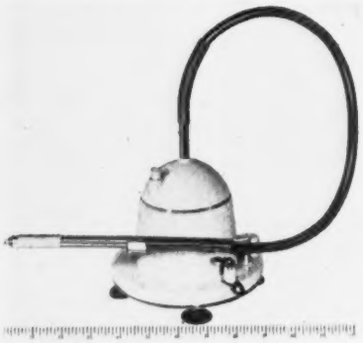
It's *Mirropane*®, the "see-thru" mirror. Useful in hospitals, schools, banks, stores, homes...anywhere you want to observe without being seen. When made with clear plate glass, a light-intensity differential between rooms of about 7 to 1 is needed. For even better performance, you should specify *Mirropane* made with *Parallel-O-Grey*® plate glass. This reduces the light-intensity differential to about 3 to 1. Call your L·O·F distributor or dealer, listed under "Glass" in the Yellow Pages, or write L·O·F, 891 Libbey·Owens·Ford Building, Toledo 1, Ohio.

MIRROPANE
the "see-thru" mirror
LIBBEY·OWENS·FORD

MADE IN U.S.A.
LOF GLASS

Circle 130 for further information

220 volts 60 cycle AC. Dimensions are 22⅛"x62¾"x30½".
AIA FILE NO. 35-H-3
MFR: PARAGON-REVOLUTE DIV., CHARLES BRUNING CO., INC.
Circle 231 for further information



DRAFTING ERASER ELECTRIC/AUTOMATIC

MFR'S DESCRIPTION: electric, automatic eraser.
USES: offices and drafting rooms.
SPECS/FEATURES: appliance neatly and quickly erases pencil, ink, typewriting, and printing, according to manufacturer. Eliminates smudging, and the need for slip-sheeting with carbons and for erasing masks. Erasing agent is a rubber rod, 4" long, available in different grades for a variety of applications. Vertical cable permits erasing over a 24" radius. Retails for $34.95 FOB, Cleveland.
AIA FILE NO. 35-H-41
MFR: THE MARGO COMPANY
Circle 232 for further information

NEW PENCILS AND LEADS FOR DRAFTING FILM USE

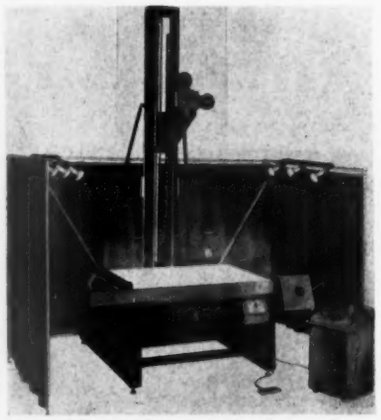
MFR'S DESCRIPTION: a new line of drawing pencils and leads.
USES: drafting.
SPECS/FEATURES: leads designed for use on *Mylar*, *Ester*, and *Cronar* polyester base drafting films. Pencil is available in five degrees of hardness in manufacturer's special pencil shape. Leads are also available in five degrees for use with mechanical pencils.
AIA FILE NO. 35-H-3
MFR: RICHARD BEST PENCIL CO., INC.
Circle 233 for further information

OPERATING MANUALS FOR COMMERCIAL BUILDINGS

MFR'S DESCRIPTION: service organization prepares operating manuals for commercial buildings prior to construction as a means of reducing operation and maintenance costs.
USES: planning building operation.
SPECS/FEATURES: service organization is staffed by technical experts in the construction field and offers architects and engineers tailor-made instructions covering maintenance and servicing of all materials and equipment for a given structure.
AIA FILE NO. N/A
MFR: ROBERT REYNOLDS & ASSOCIATES, (a service organization)
Circle 235 for further information

BLACK-ON-WHITE COPIER FOR SMALL OFFICE

MFR'S DESCRIPTION: small size, lower priced copier.
USES: smaller offices or individual departments.
SPECS/FEATURES: Copier is smaller than most typewriters and weighs about 12 lbs. Unit is designed to yield same quality copies of higher-priced units up to 9" wide. Copier reproduces every color whether pen, pencil, ballpoint, typed, printed or stamped from original on any kind of paper, film, or cloth, according to manufacturer. Price is $99.50.
AIA FILE NO. 35-H-31
MFR: OZALID DIV., GENERAL ANILINE & FILM CORPORATION
Circle 236 for further information

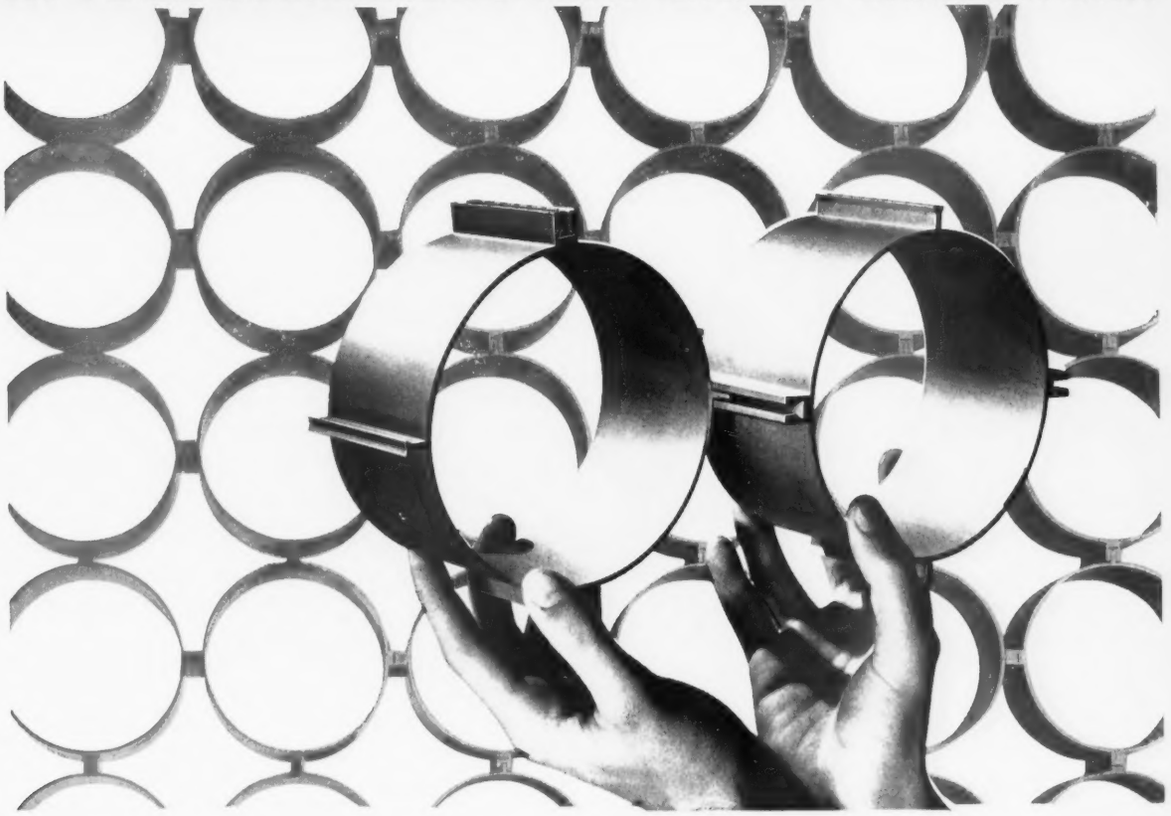


SUB-SURFACE LIGHTING FOR DRAFTING PHOTOGRAPHY

MFR'S DESCRIPTION: new sub-surface illumination table.
USES: photographing of plans and sketches.
SPECS/FEATURES: sub-surface illumination instrument measures 54"x80" x4⅝". Unit operates on 120 volts, AC, 60 cycle, 7.5 amperes maximum using ten 70-watt fluorescent lamps and

Circle 131 for further information about PRECOLITE pp 50-51 →

AT YOUR COMMAND...A NEW KIND OF GRILLEWORK



GRILLEWALL*...*light...lacy...elegant*

First non-modular aluminum grillework—here is a new design element of limitless application that lends classic lightness and elegance to contemporary architecture and at the same time provides cost-saving light and heat control. Grillewall features a new self-assembly concept which totally eliminates riveting, welding and all visible bolted connections. It is fully capable of stretching the entire height and width of a multi-story building without the interruption of any intermediate framing members. Grillewall's physical characteristics have been exhaustively pre-tested and full architectural details and test results are available. As a basic and versatile element in design, Grillewall produces the feeling and simplicity of custom architecture—yet is within the range of mass-production cost.

GRILLEWALL—by the originators of INFINILITE, the luminous plastic grillework of infinite dimension. Write for the new GRILLEWALL eight-page Catalog today.

GRILLEWALL*

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a product of Integrated Ceilings & Grilleworks, Inc.

INTEGRATED Ceilings & Grilleworks, Inc. AEN
11766 W. Pico Blvd., Los Angeles 64, Calif.

☐ *Send new Grillewall catalog.*

☐ *I have a project on the boards—please rush information at once.*

Name

Firm

Address

City State

Circle 198 for further information

Illus. Cat. No. **B-103-Y**
3-arm teak spreader
with three "Y" style
2-piece glass shades.

Illus. Cat. No. **B-105-U**
5-arm teak spreader
with five "U" style
glass shades.

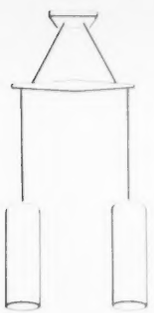
PRESCOLITE'S
EXCITING NEW

Holiday

PENDANTS

A gay and colorful grouping of pendant forms designed and executed in hand-blown combinations of colored glass as well as exquisite satin opal glass. Metal shades come in striking baked enamel finishes set off with lustrous brass accents. All shades are suspended by white plastic cords, and are designed for mounting on 3¼" or 4" outlet boxes. Teak spreaders are of pure Bangkok Teak with hand-rubbed satin cabinet finish. You can create multiple combinations of forms and colors and stagger the heights to form focal points of interest for any interior. Write for complete catalog information.

PRESCOLITE MANUFACTURING CORPORATION
2229 Fourth Street, Berkeley 10, California

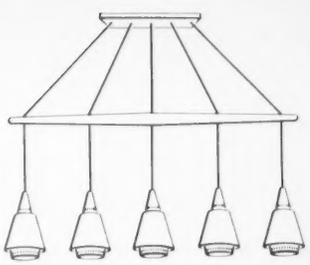


Illus. Cat. No. **S-202-O**
2-light teak spreader
with two "O" style
glass shades.

Illus. Cat. No. **S-203-K**
3-light teak spreader with three
2-piece "K" style shades.
White satin opal inner
glass, metal outer shades.

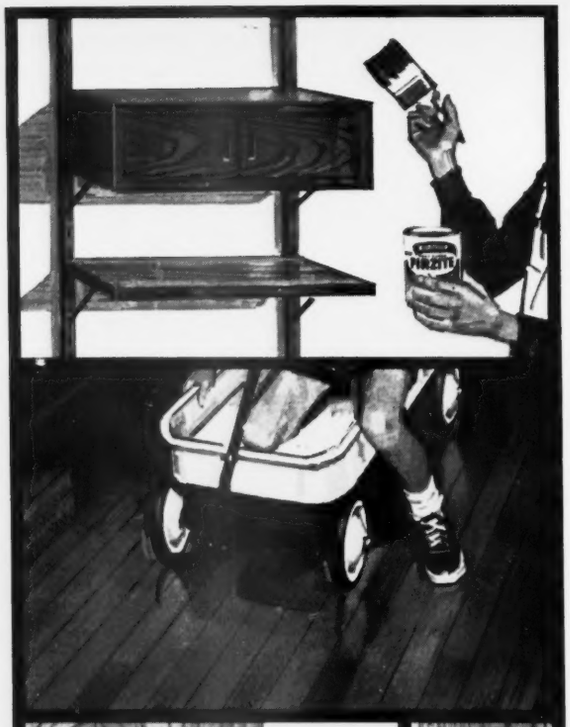
Illus. Cat. No. **C-303-J**
3-light, round, polished brass
canopy with white,
satin opal inner
glass and 3-piece
outer metal shields.

Illus. Cat. No. **A-101-F**
Single canopy, white
satin opal inner glass
and 2-piece outer metal
shields.



Illus. Cat. No. **S-205-R**
Rectangular metal canopy,
5-light teak spreader
with metal shades
finished in baked enamel
and polished brass.

For a lower-cost
Danish-type oil finish..



For a super-tough
floor finish...

To minimize checking
of painted surfaces...

WELDWOOD introduces:

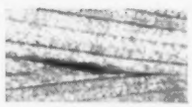
DEEP FINISH FIRZITE

Penetrating Sealer-Finish

For furniture—New Weldwood Deep Finish Firzite* produces a beautiful Danish-type "hand-rubbed" effect *without* laborious rubbing.

For floors—Deep Finish Firzite penetrates the wood fibers, producing a low-luster finish that lasts as long as the surface of the wood.

For softwoods—Deep Finish Firzite seals the surface like its famous predecessor, Clear Firzite. Helps prevent grain raising or checking on paint or varnish work, and unsightly "wild grain" when staining.



Free wood samples! See the results obtained with the new Deep Finish Firzite, for specification on your jobs. Write for free wood samples to: United States Plywood, Dept. AEN 9-61, 55 West 44th Street, New York 36, N. Y.

WELDWOOD
WOOD FINISHES

Products of United States Plywood

Circle 199 for further information

protected by two 7.5 ampere line fuses.
AIA FILE NO. 35-H-31
MFR: CHARLES BRUNING CO., INC.
Circle 237 for further information

THIN PENCIL LEAD FOR HAND LETTERING

MFR'S DESCRIPTION: a thin smudge-proof plastic pencil lead.
USES: drafting.
SPECS/FEATURES: pencil lead enables draftsmen to produce sharp, free-hand lettering on polyester drafting film and water-resistant pencil cloth. Designed for use with any standard fine-line mechanical pencil, the new lead is .036" in diameter. It is claimed to assure drawing of crisp lines that never vary in width. Leads are packaged in a plastic dispenser, containing 12 leads.
AIA FILE NO. 35-H-3
MFR: KEUFFEL & ESSER CO.
Circle 238 for further information

COMMERCIAL INTERIORS

COMBINATION SHELF AND SOAP DISPENSER

MFR'S DESCRIPTION: a newly designed combination shelf and soap dispenser.
USES: commercial and industrial.
SPECS/FEATURES: dispenser is a wall-hung unit, said to be tamper-proof. Available either in a single- or double-valve model. Dimensions for all models are 17½"x5"x3".
AIA FILE NO. 29-J
MFR: BOBRICK DISPENSERS, INC.
Circle 239 for further information

SECRETARIAL SWIVEL CHAIR WITH MECHANISM HIDDEN

MFR'S DESCRIPTION: secretarial chair has concealed swivel mechanism.
USES: commercial.
SPECS/FEATURES: protruding adjustment devices are eliminated, giving chair a lighter, neater appearance, according to manufacturer. A cylindrical sleeve surrounding the center column is turned to raise and lower the seat position. Two flushed mounted aluminum knobs, incorporated in the back shaft at base of seat, control the tension and vertical and horizontal movements of the backrest.
AIA FILE NO. 28
MFR: KNOLL ASSOCIATES, INC.
Circle 240 for further information

NON-FOLDING CHAISE FOR COMMERCIAL USE

MFR'S DESCRIPTION: chaise of non-folding design.
USES: hotels, motels
SPECS/FEATURES: chaise constructed of polished aluminum, resilient plastic strap seating material, hardwood arms and aluminum hardware. Available in four colors; green, white, coral and yellow. Chaise has an adjustable four-position back.
AIA FILE NO. 28-A
MFR: TELESCOPE FOLDING FURNITURE CO., INC.
Circle 241 for further information

HIGH INTENSITY LAMP FOR CLOSE WORK

MFR'S DESCRIPTION: incandescent 10" high, lightweight lamp of variable intensity.
USES: drafting rooms.
SPECS/FEATURES: lamp features a miniature reflector with a diameter of 2½". A five-position switch provides varying intensities ranging from 12.2 foot-candles to 202 foot-candles using an ordinary 6-volt bayonet type bulb. Lamp available in black or white finish.
AIA FILE NO. 31-F-23
MFR: TENSOR ELECTRIC DEVELOPMENT CO., INC.
Circle 242 for further information

MODULAR DUCT FURNACES IN EXPANDED LINE

MFR'S DESCRIPTION: four new capacities added to a line of modular duct furnaces.
USES: heating.
SPECS/FEATURES: new capacity duct furnaces are rated at BTU/hr from 175,000 to 350,000. All models are

← **Circle 131 for further information about PRESCOLITE pp 50-51**

DRAFTING TRENDS

New, improved Rotolite Expeditor conveniently makes sepia reproducibles and diazo films in addition to low cost whiteprints.

Make your own whiteprints in two minutes or less

Here's a new, fast, economy whiteprinter that fills a real need in small drafting rooms or large engineering departments.

Workprints for architects, consulting engineers, surveyors, contractors. The Rotolite Expeditor can handle *all* copying needs for the two- or three-man drafting operation, is always ready to cope with rush jobs, even after hours. With Post Super Vapo Papers, print production can be doubled.

Quick checkprints for larger manufacturers. Even huge, multi-department engineering divisions with their own reproduction departments or outside sources praise Expeditor's practical, on-the-spot convenience for quick copies of preliminary sketches, checkprints, conference data, visual presentations. Hundreds of companies have placed Rotolites advantageously in each of their several engineering and drafting rooms for "self-service" whiteprints in a hurry.

No preheating or other delays—Rotolite makes prints immediately. There's a choice of three models to take 18", 27" or 42" wide tracings of any length. Furnished with dry-developing ammonia tube. Rotolite is easily hung on wall or placed flat on a table top, plugs into any standard convenience outlet. With new dial speed control, you can make cloth and film reproductions immediately, as well as paper prints. Provides clean, sharp prints every time through simple design, durable construction. Single lamp simplicity is entirely adequate for every "quick print" need.

Recommended print materials. Use Post diazotype sensitized products —Vapo paper, sepia vellum, cloth or film—for best results. Get full information on Expeditor and standard Rotolite whiteprinters from your Post dealer or write Frederick Post Company, 3650 N. Avondale Avenue, Chicago 18, Ill.

POST

SENSITIZED PAPERS & CLOTHS • TRACING & DRAWING MEDIUMS • DRAWING INSTRUMENTS & SLIDE RULES
ENGINEERING EQUIPMENT & DRAFTING SUPPLIES • FIELD EQUIPMENT & DRAFTING FURNITURE

Circle 132 for further information

DUNHAM-BUSH VARI-VAC DIFFERENTIAL HEATING

the system that's specified and respecified

FOR FUEL ECONOMY

FOR GREATER TENANT COMFORT

FOR LOWER SYSTEM MAINTENANCE

FOR PRECISE CENTRAL CONTROL

VARI-VAC—The sub-atmospheric steam control system. Automatically adjusts steam temperature from 133° to 218°—25″ vacuum to 2 lb. pressure—to give greatest comfort and economy of operation with changing outside weather conditions. Effects fuel savings to cut costs up to 40%. Provides minimum room temperature variations and equal steam distribution to all radiators regardless of location and heat demand. Ensures quiet operation and low maintenance.

Send for full details.

Specified and Respecified at University of Oregon

Proved-in-use Vari-Vac is respecified by users, time and time again. At University of Oregon's 330 room new Walton Hall Dormitory, for example, 10 zones of Vari-Vac were recently specified and installed (with Dunham-Bush vacuum pumps, condensate pumps, convectors, valves, traps, strainers). This brings the University's use of Vari-Vac to over 20 zones of control with previous installations in Earl Hall, Music Building, Journalism Building, Oregon Building and Commerce Building.

DUNHAM-BUSH

DUNHAM-BUSH, INC.

WEST HARTFORD 10, CONNECTICUT, U. S. A.

SALES OFFICES LOCATED IN PRINCIPAL CITIES

Circle 133 for further information

PRODUCTS, EQUIPMENT, MATERIALS

designed for installation "downstream" from cooling coils in year-round air conditioning systems, and for temperature rises ranging from 20°F to 100°F. Modulating input ranges down to 20%. Normally equipped with 115-volt controls, furnaces may be converted to 24-volt operation and to 230-volt wiring.

AIA FILE NO. 30-B

MFR: REZNOR MANUFACTURING CO.

Circle 243 for further information

DOORS/WINDOWS

ALUMINUM WINDOWS WITH SINGLE GLAZING

MFR'S DESCRIPTION: four basic styles of single glazed windows.

USES: residential, commercial and institutional.

SPECS/FEATURES: windows consist of horizontal sliding sash and glass fiber screening in a 2 3/16″ deep extruded aluminum frame. Sash members are of hollow, box-channel construction. Glass is mounted in vinyl plastic glazing channels. Windows are weather-stripped with vinyl and silicone treated pile mohair. Double sill has multiple weep holes. Available in twin-slide, triple-slide, "quad-slide" and picture-slide styles.

AIA FILE NO. 16-L

MFR: FLEET OF AMERICA, INC.

Circle 244 for further information

LONG-LIFE HOME THRESHOLD OF STAINLESS STEEL

MFR'S DESCRIPTION: a new stainless steel threshold for homes.

USES: residential entrances.

SPECS/FEATURES: new threshold requires no special caulking or inserts to achieve an efficient seal. All screws are concealed beneath the vinyl seal strip. Threshold is pre-notched for door jamb and requires no additional cutting for standard door widths. Lengths available up to 72″, and custom sizes are available.

AIA FILE NO. 27-B

MFR: UNITED INDUSTRIES, INC.

Circle 245 for further information

PRODUCTS, EQUIPMENT, MATERIALS

ELECTRIC HEATERS FOR PORTABLE USE

MFR'S DESCRIPTION: a new line of portable electric heaters.
USES: heating.
SPECS/FEATURES: all models feature safety tip-over switch, lithographed panel area, instant heating ribbon elements, tamperproof safety grille, large carrying handle and thermostat control. Heaters are designed for enclosed areas requiring periodic heat quickly.
AIA FILE NO. 30-B-5
MFR: FASCO INDUSTRIES, INC.
Circle 246 for further information

COMMERCIAL OFFICE CHAIRS IN NEW DESIGN SERIES

MFR'S DESCRIPTION: line of chairs specifically designed for commercial office use.
USES: commercial
SPECS/FEATURES: chairs range in color and styling from executive

Circle 134 for further information →

How to end up with an insulated roof exactly the way you designed it

Specify Insulite Cant Strip and Tapered Edge Strip with Insulite Roof Insulation.

The full Insulite line of roofing products is designed to make it easy for the roofing contractor to do a complete job—and to do it quickly and at low cost.

1 The basic Insulite Roof Insulation is a tough, rugged product with the *extra* strength and rigidity to resist cracking, crushing and flexing.

2 Insulite Accessories—Cant Strip and Tapered Edge Strip—insure perfect joints where the roof meets a vertical surface, or where there is a building-up or tapering-off area. These accessories give a smooth, strong surface that will not break or puncture under hard construction or maintenance activities.

PROTECT YOURSELF FROM MAKE-DO EXPEDIENTS

Insulite Accessories make it easy for any contractor to follow your details. No sawed, beveled or built-up boards. Insulite Cant or Tapered Edge Strips are shaped to do a perfect job even in tough problem areas.

You get perfect construction and insulation where the roof meets a wall, chimney or other vertical surface; where the outer edges taper off; where you want drainage channeled.

BE SURE OF A ROOF THAT CAN TAKE IT

Insulite Roof Insulation is made of all-wood fibers from hardy, slow-growing Northern trees. It is not soft; it is not brittle. It has the high transverse and compressive strength needed to resist the hardest kind of wear.

Insulite Roof Insulation will give you a roof that stands up under loaded wheelbarrows, heavy LP gas cylinders, bitumen kettles, the heaviest equipment that might be used on it.

ACCESSORIES ARE OF COMPATIBLE MATERIAL

Insulite Tapered Edge Strip and Insulite Cant Strip are made from the same basic wood fibers as Insulite Roof Insulation. This eliminates any hazards caused by the introduction of two materials with conflicting properties.

Insulite Accessories have the same low coefficients of expansion; the same vapor permeance characteristics; the same thermal resistance. Dimensional stability of Insulite Roof Insulation is excellent.

CHOICE OF DIMENSIONS AND TYPES

Insulite Roof Insulation comes in 24″ x 48″ and 23″ x 47″ sheets—½″, 1″, 1½″ or 2″ thick. Edges are square in the ½″ thickness. In other sizes you may order either square or shiplapped edges.

Insulite Cant Strips come in 4′ lengths—either 3″ x 3″ or 4″ x 4″. Insulite Tapered Edge Strips are 4′ long by 12″ wide. They measure 1⅝″ at the thick edge, and taper to ⅛″ at thin edge.

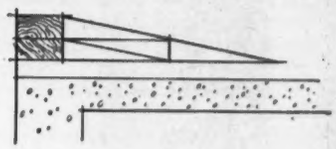
Choose from two kinds of Insulite Roof Insulation: Ins-Lite, or asphalt-treated Graylite.

GET MORE FACTS AND NEW BOOKLET

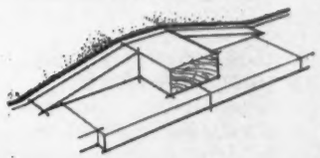
Just call your Insulite representative for more information or send the coupon below directly to Insulite for the new Insulite Roof Insulation Manual.

INSULITE ACCESSORIES MAKE IT EASY FOR YOU TO SOLVE SPECIAL PROBLEMS

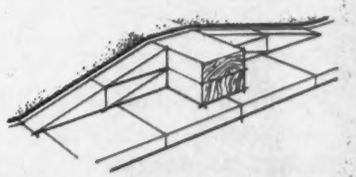
ELIMINATE 90° BEND IN ROOFING FELTS. Specify Insulite Cant Strips where roof meets chimney, wall or other vertical surface. A well-designed joint that protects felt from cracking, makes flashing easier, looks better.



CARRY FELT SMOOTHLY TO ROOF EDGE. Insulite Tapered Edge Strip makes roofs more perfect than ever before. It underlies felt layers, eliminates sharp angles where cracks often develop, carries roofing felt smoothly over edge nailing member.



CHANNEL DRAINAGE ANYWHERE ON A FLAT ROOF. Just position Insulite Tapered Edge Strips on either side of raised nailing base. Because every strip is precision-made to same size, perfect drainage curbs result.



BUILD UP TO HEIGHT YOU NEED. Insulite Tapered Edge Strips are the answer to this problem. Just have them laid as shown here. These strips are bevel-cut from Graylite Insulation Board.

SPECIFY

INSULITE®

Roof Insulation Products

INSULITE, *made of hardy Northern wood*

Insulite Division of Minnesota and Ontario Paper Company, Minneapolis, Minnesota

Please send me my copy of the new illustrated Insulite Roof Insulation Manual.

NAME

ADDRESS

CITY ZONE STATE

AE-3

PRODUCTS, EQUIPMENT, MATERIALS

type through a variety of secretarial and clerical models. Chairs feature five separate adjustments: seat height, tilting tension, backrest height, backrest depth and backrest tension. Chair series available in nine standard colors.
AIA FILE NO. 28-A
MFR: REMINGTON RAND SYSTEMS
Circle 254 for further information

VARYING BEAM INTENSITY IN NEW FLOODLIGHTS

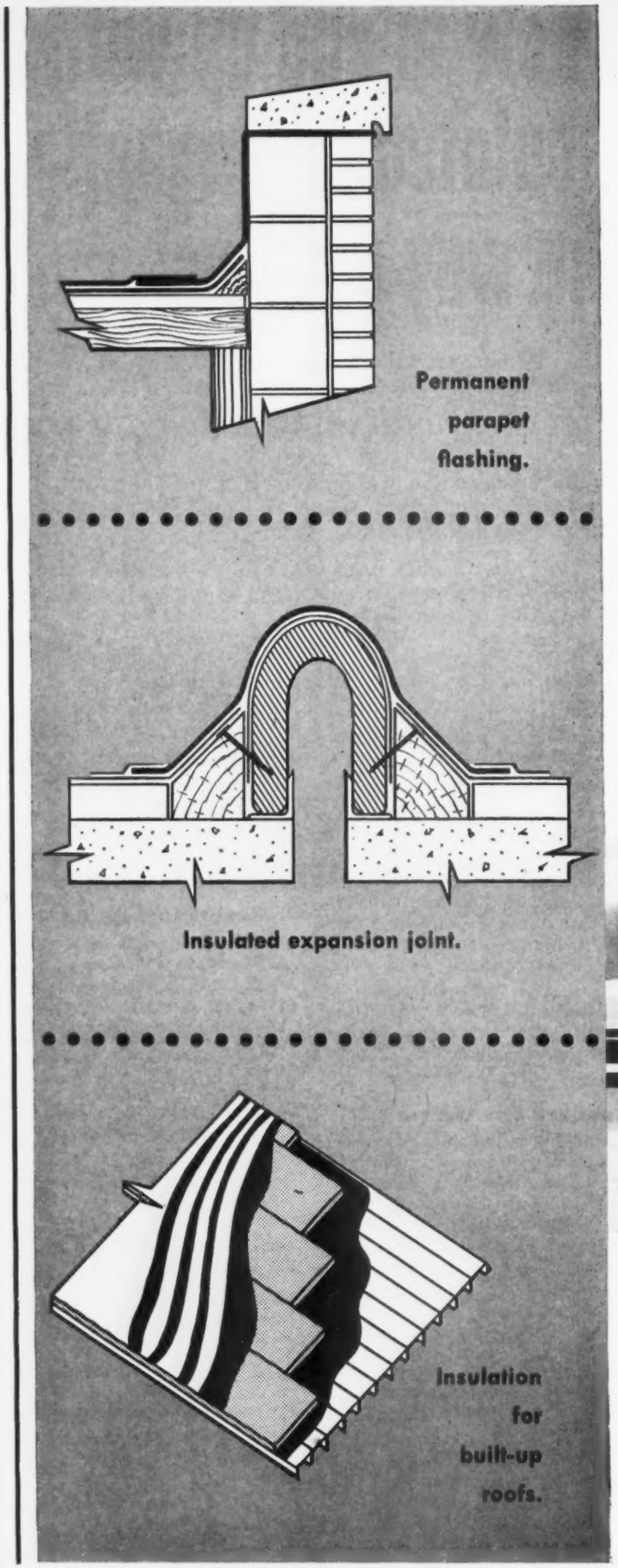
MFR'S DESCRIPTION: introduction of a line of floodlight fixtures.
USES: athletic field, stadium, and other exterior lighting requirements.
SPECS/FEATURES: line of floodlights provide beam spreads I through V as determined by the NEMA and also includes a 400-watt mercury vapor unit. A dual inner reflector and proper reflector contour help produce better lighting efficiencies and more uniform distribution patterns, according to manufacturer. Rear hinged lamp section swings open.
AIA FILE NO. 31-F-30
MFR: APPLETON ELECTRIC CO.
Circle 247 for further information

WALL PANELING FINISH IN NEW HARDWOOD

MFR'S DESCRIPTION: new line of hardwood wall paneling finishes.
USES: residential and commercial wall paneling.
SPECS/FEATURES: paneling is random-grooved in ¼"x4'x8' and ¼"x4'x10' sizes. Paneling is designed for installation by nailing into studs, to furring strips, or by cementing directly to existing walls. Matching prefinished moldings are available.
AIA FILE NO. 23-L
MFR: E. L. BRUCE CO., INC.
Circle 248 for further information

SERIES OF COMPACT SEWAGE TREATMENT PLANTS

MFR'S DESCRIPTION: compact sewage treatment plants in six sizes.
USES: mechanical purification.
SPECS/FEATURES: standard designs, based on a 24-hour run-off, cover a range of 10,000 to 180,000 gallons per day. Smaller sizes are shipped shop-assembled; larger sizes are available field-constructed by manufacturer. 1.75 kilowatts power a 60,000 gallon-per-day unit.
AIA FILE NO. 29-C-2
MFR: DORR-OLIVER, INC.
Circle 249 for further information

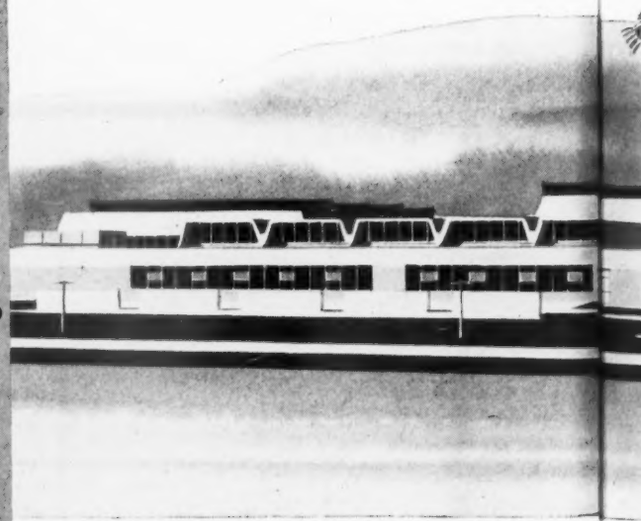


Circle 135 for further information

DOW

Dow roofing materials provide permanent water- and moisture-tight seals for . . .

- **PARAPETS AND ROOF STRUCTURES**
- **EXPANSION JOINTS**
- **INSULATING BUILT-UP ROOFS**
- **METAL-TO-METAL JOINTS**



SOUTHWESTERN COMMUNITY HIGH SCHOOL, FLINT, MICHIGAN

Architect: Eberle M. Smith Associates, Inc.

Roofing Contractor: Sterner Sheet Metal and Roofing Co.

All through-steel joints, parapets and valleys are flashed with Saraloy 400.

ROOFING MATERIALS

solve design problems, reduce installation time and costs!

Problems with roofing and flashing design? Dow roofing materials can help make designing of both conventional and non-conventional buildings easier... sometimes even permit unusual designs not possible with ordinary materials.

Take Saraloy® 400 flexible sheet flashing, one of the most durable, easiest-to-use flashing materials available. It can be conformed to almost any shape without prefabrication . . . can be adhered to all common building materials. Saraloy 400 is ideal for flashing parapets, metal-to-roof joints, "through-steel" sections. For roof expansion joints, its flexibility accommodates even extreme relative movement between building sections.

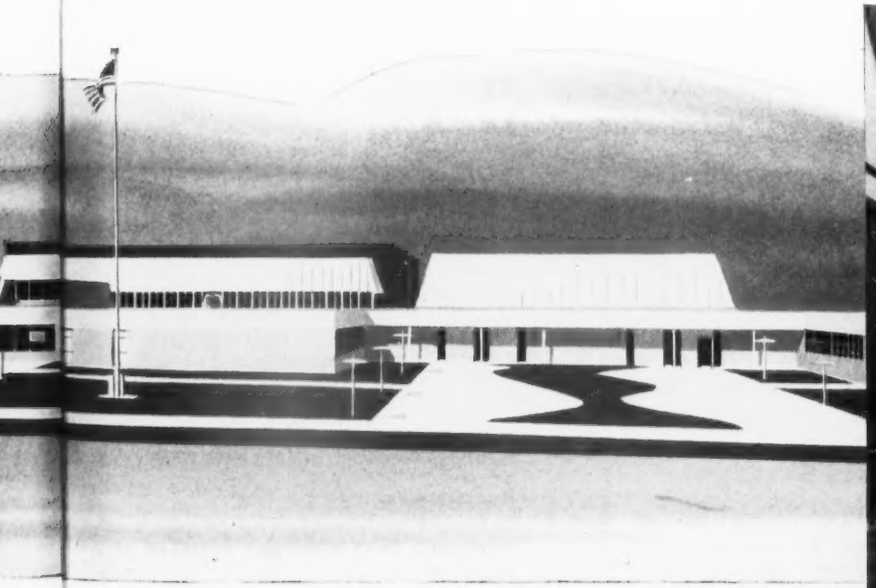
When other kinds of flashing won't last, or require costly preforming and fitting, Saraloy 400 can be your best answer. Even where other flashing *will* work, Saraloy 400 often works better, for longer.

Built-up roofs can be insulated quickly, economically, using Roofmate*. This Dow roof insulation board has a lightweight core of Styrofoam® enclosed in asphalt-laminated kraft paper.

Roofmate insulation is so light it can be handled easily, laid in a hurry. Because of high moisture resistance, it acts as *its own vapor barrier!*

Dow roofing materials and other building products not only ease designers' problems, but their cost of installation is low . . . even for unconventional designs. For information and data on Dow Building Products, write THE DOW CHEMICAL COMPANY, Midland, Michigan, Plastics Sales Department 1503JF9.

*Trademark



Saraloy 400 seals valleys permanently, at low installation cost.

THE DOW CHEMICAL COMPANY DOW Midland, Michigan

Circle 135 for further information

PRODUCTS, EQUIPMENT, MATERIALS

MULTI-SURFACE PAINT FOR INTERIOR/EXTERIOR

MFR'S DESCRIPTION: paint for use on all types of interior and exterior wall surfaces.

USES: residential, commercial and industrial.

SPECS/FEATURES: paint available in 20 colors and designed for use on wallboard, concrete, stucco, masonry blocks, asbestos shingles, brick, metal or wood. Paint is said to dry in 20 minutes and to be ready for a second coat in 30 minutes. Paint's "breather-type" finish prevents cracking, blistering or peeling by allowing moisture under surface to escape as vapor, according to manufacturer.

AIA FILE NO. 25-B

MFR: THE REARDON CO.

Circle 250 for further information

SPOT/FLOOD LAMPS WITH AMBER COLOR

MFR'S DESCRIPTION: manufacturer has added amber to a total of seven colors in a line of spot and flood lamps.

USES: illumination.

SPECS/FEATURES: four lamps are available with new amber filters. They are the 100- and 150-watt hard-glass projector lamps and the 75-watt and 150-watt reflector lamps. Other colors offered in this line are blue-white, blue, green, yellow, pink and red.

AIA FILE NO. 31-F-22/25

MFR: GENERAL ELECTRIC CORP.

Circle 251 for further information

PLASTIC LOUVER PANEL FOR MODULAR LIGHTING

MFR'S DESCRIPTION: plastic cubicle louver lighting panel.

USES: commercial interiors.

SPECS/FEATURES: panel designed for larger area modular lighting patterns and wide continuous runs of light. Louver affords almost complete lamp concealment and is designed for optimum diffusion regardless of light intensity. Measures 2'-6"x5', with angling of 45°x45°.

AIA FILE NO. 31-F-24

MFR: AMERICAN LOUVER CO.

Circle 252 for further information

CHEMICAL FORMULATION CLEANS BUILDING STONE

MFR'S DESCRIPTION: a new chemical formula for stone cleaning.

USES: exterior and interior cleaning of stone.

SPECS/FEATURES: formula consists of salts in solution which in the pres-

Why sheet rubber flooring was selected for patient areas in Presbyterian Hospital modernization

The problem of infectious Staphylococci germs tipped the balance in favor of sheet rubber flooring in the recent modernization of Presbyterian Hospital, Charlotte, N. C.

The architects reasoned that fewer seams and cracks would mean fewer hiding places for this elusive hospital menace. To achieve an installation with a minimum of joints they specified sheet rubber flooring—tightly fitted by overlapping and double cutting—coved up the walls to normal base height.

The floors are warmly attractive, with terrazzo styling in rubber that provides an impressive overall design effect.

Sheet Rubber flooring has it for hospital patient areas—quiet comfort underfoot, easy to maintain, with unlimited design and color possibilities. And the colors go clear through—no laminations!

Two styles to choose from: Flexi-Flor in 20 marbleized colors—Tara-Flor in 12 terrazzo color combinations.

Wall-Flex (rubber wall covering) is ideal for hospital patient areas. Designed for durability and attractiveness (14 pastel mottled colors), Wall-Flex won't mar, nick or scratch. Outstanding dimensional stability, low maintenance cost and proven past performance guarantee long service and economy.

WRITE TODAY FOR SAMPLES AND LITERATURE

THE R.C.A. RUBBER COMPANY

1833 EAST MARKET STREET • AKRON, OHIO

An Ohio Corporation of Akron, Ohio

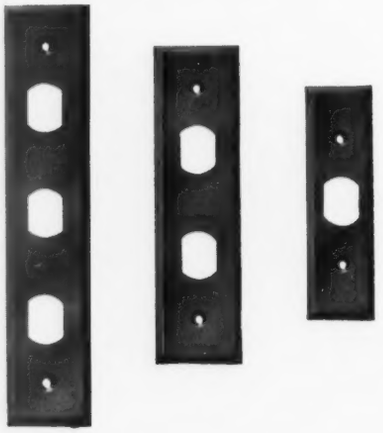
Circle 136 for further information

ence of dirt, grime and impurities react to form active molecules that break up grime and lift it from surface. Cleaner will not erode or pit surfaces, loosen mortar, or discolor stone. Manufacturer also claims cleaner hardens stone surfaces.

AIA FILE NO. 8-H

MFR: K & E CHEMICAL CO.

Circle 253 for further information



THIN, STAINLESS STEEL PARTITION WALL PLATES

MFR'S DESCRIPTION: a line of thin wall plates.

USES: electrical outlets.

SPECS/FEATURES: a series of thin, stainless steel wall plates designed for use in movable partitions in commercial and industrial installations. Supplied with one, two, three or blank openings.

AIA FILE NO. 31-C-71

MFR: ARROW-HART & HEGEMAN ELECTRIC CO.

Circle 254 for further information

SHOWER RECEPTORS IN NEW COLORS

MFR'S DESCRIPTION: new line of shower receptors.

USES: bathrooms.

SPECS/FEATURES: receptors are made of a nylon- and glass-fiber-reinforced polyester resin. Available in 8 models with varied color selections and a combination of 64 different sizes, shapes and colors. Many of the colors are coordinated with manufacturers line of plumbing fixtures.

AIA FILE NO. 29-C-3

MFR: INGERSOLL - HUMPHRYES DIV., BORG-WARNER CORP.

Circle 255 for further information

LITERATURE

Literature cited in this department is available from various manufacturers and associations free of charge, except where indicated. To obtain copies, circle the keyed numbers on the reader service cards facing pages 1 and 98.

THREE-SEATER
Catalog sheet available to architects shows chair, two-seater and three-seater of contemporary design for commercial use. Photographs of each of the three pieces and information on dimensions and materials is included.
AIA FILE NO. 28-A
MFR: THONET INDUSTRIES, INC.
Circle 303

ARCHITECTURAL PHOTOGRAPHY
The new *Directory of Professional Photography* has been made available free of charge to architects and engineers. The new directory contains a cross-indexed listing of more than 6,500 members of the Association categorized by state, city, and photographic classification. A section lists all Association members specializing in architectural photography. The Directory is designed so that buyers of photographic services can quickly discern which studios are equipped and qualified to deliver the kind of photography required. Except to readers of this magazine, price is $5.00.
AIA FILE NO. 1-C-2/41
ASSN: PROFESSIONAL PHOTOGRAPHERS OF AMERICA, INC.
Circle 304

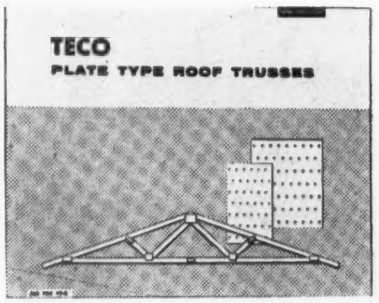


PLATE TYPE ROOF TRUSSES
Booklet presents new line of plate type roof trusses. It contains complete design details for spans ranging from 16′ to 32′ and slopes from 2½: 12 to 7:12. This series of trusses is also covered by FHA Bulletin SE-297, a copy of which is contained in new booklet. (16 pp.)
AIA FILE NO. 19-B
MFR: TIMBER ENGINEERING CO.
Circle 301

INTERIOR DESIGN CENTER
The Design Center for Interiors, located in New York City is offering architects literature on its operations and showrooms. The Center is a permanent exposition of interior design products and is open free to the public.
AIA FILE NO. 28
ASSN: DESIGN CENTER FOR INTERIORS
Circle 302

RELIEF BRONZE SCULPTURE
A New York City firm that specializes in ancient relief sculpture cast in bronze has recently made available to architects a brochure describing and displaying a line of sculptures. Brochure shows each particular casting and explains full history of these reproductions from Egypt and other countries. (42 pp.)
AIA FILE NO. 15-R
MFR: SCULPTURA, INC.
Circle 300

LUXURY DOOR HARDWARE
A major producer of luxury door hardware has recently released a brochure for architects. In addition to various models of door hardware shown, a series of award-winning "clavos" or spanish nails, used generally for dressing entrance door, furniture and in-laid flooring, is shown. (12 pp.)
AIA FILE NO. 27-B
MFR: CLAVOS INCORPORATED
Circle 305

CLASSROOM CABINETS
An architectural specification and data guide on a line of cabinets, counters, wardrobes and special units for classrooms. (52 pp.)
AIA FILE NO. 28-A
MFR: HARMON CABINETS, INC.
Circle 306

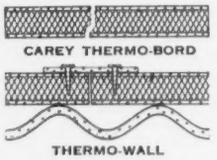
No roofing or siding material is more economical . . . versatile . . . trouble-free . . . than

Careystone Corrugated Panels

Careystone asbestos-cement sheets resist practically all atmospheric conditions. No protective coating needed. Won't burn, rust or corrode. They're maintenance-free.

You can apply Careystone sheets with overlap joints or battens. Paint them any color—or leave them in the original gray finish. Careystone sheets can be supplied in 2⅝" as well as 4.2" corrugations.

You can combine Careystone sheets with Carey Thermo-Bord structural insulated sandwich panels for insulated walls that are finished inside and out. We call this thermo-wall construction. (Thermo-Bord is composed of insulation board faced with asbestos-cement).



Its insulating efficiency and finished surfaces also make it an ideal panel for interior partitions. For literature on Careystone Corrugated and Thermo-Bord panels, write Dept. AE-961, The Philip Carey Mfg. Company, Cincinnati 15, Ohio.

Carey®

Circle 137 for further information

LITERATURE

SCHOOLS/HOSPITALS

HOSPITAL HARDWARE

Manufacturer of door and entrance hardware has recently published a booklet on hardware for hospitals. More than 100 photographs and illustrations cover a line of door hardware and explanations of different types of hardware for separate areas in hospitals are covered in detail. (10 pp.)

AIA FILE NO. 27-B

MFG: SCHLAGE LOCK CO.

Circle 307

SECTIONAL COUNTERS

New booklet on sectional cafeteria counters is fully illustrated and designed to be a comprehensive specifying guide in the selection of cafeteria counters. Plans, elevations and roughing-in details have been included. Also listed are optional accessories, types of front panelings available and suggested floor plan layouts. (40 pp.)

AIA FILE NO. 35-C-3

MFR: SOUTHERN EQUIPMENT CO.

Circle 308

SCHOOL CONSTRUCTION

Design, cost and construction considerations in a modern school building are covered in a new brochure. Brochure has eight sections and ranges from selection of site, and building design, to a new study of cost comparisons. A study of masonry cavity walls in school construction is also included. (26 pp.)

AIA FILE NO. 3-F

ASSN: AMERICAN MASONRY COUNCIL

Circle 309

HOSPITAL PLUMBING

A new guide to the selection of plumbing products for hospital installations has been issued. Booklet shows selected plumbing products

from a company's line of hospital fixtures and details their general and special applications in various hospital areas. (43 pp.)
AIA FILE NO. 29
MFR: AMERICAN-STANDARD DIV, AMERICAN RADIATOR & STANDARD SANITARY CORP.
Circle 310

REDWOOD IN SCHOOLS

Recent issue of manufacturer's corporate magazine covers construction of a small California college with extensive use of redwood exteriors set off by exposed concrete piers, and redwood shake roofs. Use of glued and laminated beams is described.
AIA FILE NO. 19
MFR: MONSANTO CHEMICAL CO.
Circle 311

HOSPITAL WALLCOVERINGS

A brief but comprehensive guide book showing uses of a line of wallcoverings for easy-maintenance interiors. (8 pp.)
AIA FILE NO. 28-C
MFR: L. E. CARPENTER & CO, INC.
Circle 312

CLASSROOM HEATING

Publication explains application of electric heating to classrooms. Technical information includes heat-pump heating and cooling capacities and electrical resistance heating capacities. (6 pp.)
AIA FILE NO. 30-B
MFR: LENNOX INDUSTRIES, INC.
Circle 313

HARDWARE

LUXURY BATHROOM HARDWARE

Producer of a line of plumbing hardware for residential and executive office use has a brochure outlining its selection available to architects. 169 photographs illustrate the selection of hardware, mirrors, wallplates, lighting fixtures, door hardware, and bathroom furniture. A wholesale price list is included. (36 pp.)
AIA FILE NO. 29-J
MFR: SHERLE WAGNER
Circle 314

GLASS DOOR HARDWARE

Manual contains photographs, close-up views, and dimensional drawings of a line of products for both swing-

LOCKER ROOM TALK THAT CAN BE REPEATED IN THE LOBBY

VPI SOLID VINYL FLOORING IS THE ONLY TILE WE KNOW OF THAT COMBINES BALLROOM-SLIPPER BEAUTY WITH SPIKED-SHOE DURABILITY. Pick a pattern—any pattern—and use it anywhere: on concrete above grade, on concrete below grade if not subject to water pressure, on wood floors above grade, on radiant-heated floors, steel decking, walls and counter tops. You can bend a VPI tile around a short radius and not crack it. You can dent it but you can't destroy its remarkable "memory." You can wipe away virtually any kind of spill without a trace. You have to wax it only if you're a stickler for shine. Cleaner-uppers will bless its Micro-squared edges for their precisely right angles; the finished floor seems to be seamless. VPI tile will not last forever, probably, but almost. You'd think that all this would make the price prohibitive, but you'd be wrong. Ask.

VINYL PLASTICS INC.

VPi

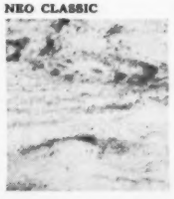
1825 ERIE AVENUE
SHEBOYGAN, WIS.

WRITE FOR FREE SAMPLES & ILLUSTRATED LITERATURE

patterns shown half actual size.

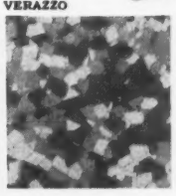
CLASSIC MARBLE

NEO CLASSIC



VINYLAST

VERAZZO



(Fill in coupon and attach to letter- head, please.)

Name_____

Company Name_____

Street Address_____

City_____ Zone____ State_____

Circle 138 for further information

LITERATURE

ing and sliding glass doors. Text includes specification details, installation information and a convenient glossary. (50 pp.)
AIA FILE NO. 27-A/B
MFR: ADAMS-RITE MANUFACTURING CO.
Circle 315

HOTEL/MOTEL HARDWARE
Manufacturer of door and entrance hardware has recently published a booklet on hardware for hotels and motels. More than 100 photographs and illustrations cover a line of door hardware; descriptions of different types of hardware for separate areas in hotels and motels are covered in detail. (16 pp.)
AIA FILE NO. 27-B
MFR: SCHLAGE LOCK CO.
Circle 316

PARTITIONS/PANELS

PATTERNED ALUMINUM SHEETS
Forty-one different forms of patterned aluminum sheet are shown in a new publication. New booklet provides width and length availability data for alloys and tempers in which each pattern is normally available. Every pattern is reproduced full scale on textured heavy stock. The flexibility of patterned sheet as a design medium is discussed in terms of potential applications, and in terms of the range of variations that may be chosen by the architect. (43 pp.)
AIA FILE NO. 14/15
MFR: ALUMINUM CO. OF AMERICA
Circle 317

PARTITION SAMPLE SWATCHES
A new set of swatches provides samples of a line of melamine-coated wall and ceiling panels, including additional patterns recently

Circle 139 for further information →

A TRIUMPH OF LIGHTING FIXTURE DESIGN FROM DAY-BRITE
Introducing
TIARA
. . . the new measure of lighting quality for offices, stores and schools
Just 3 ¾" slim! New Day-Brite TIARA provides a clean, modern look never before possible with a surface-mounted unit.
A distinctive glow around its wafer-thin frame softens brightness for high visual comfort, and gives the fixture a luminous floating appearance. Pure enchantment for any interior!
Precision Pyramid lenses create additional ceiling interest. There is no noticeable variation in surface brightness . . . no hot spots. Lighting quality is definitely Day-Brite.
For those who want the very finest, it's new Day-Brite TIARA . . . the crowning achievement in lighting fixture design. For complete information, contact your Day-Brite representative or write for free 8-page TIARA booklet. Day-Brite Lighting, Inc., 6260 N. Broadway, St. Louis 15, Mo., and Santa Clara, Calif. In Canada: Amalgamated Electric Corp., Ltd., Toronto 6, Ont.
DAY-BRITE
NATION'S LARGEST MANUFACTURER OF COMMERCIAL AND INDUSTRIAL LIGHTING EQUIPMENT
Lens by Holophane Co., Inc.

LITERATURE

introduced. Matched closely to actual inks and patterns, paper reproductions in the set represent panels in various colors and patterns.
AIA FILE NO. 23-G
MFR: BARCLAY MANUFACTURING CO., INC.
Circle 318

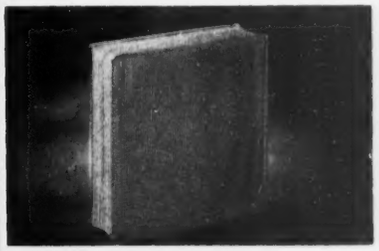
LAVATORY PARTITIONS

Ceiling hung, floor mounted and top-rail braced lavatory partitions are covered in a new brochure. Included are elevation drawings and complete specifications. (4 pp.)
AIA FILE NO. 20-B-11
MFR: MARNAY SALES DIV., ROCKAWAY METAL PRODUCTS CO.
Circle 319

ACRYLIC SHEET

Bulletin discusses the physical properties of an acrylic sheet. Included are punchability, flexibility, craze resistance, formability and other properties. (4 pp.)
AIA FILE NO. 24
MFR: ROHM & HAAS CO.
Circle 320

MISCELLANY



USING GLASS BLOCK

Case histories of industrial plants and offices using glass blocks are highlighted in a new book, with various block patterns illustrated. Installation methods, specifications and physical data are provided. (12 pp.)
AIA FILE NO. 26-A
MFR: OWENS-ILLINOIS GLASS CORP.
Circle 321

CONCRETE/MORTAR CONSIDERATIONS

A comprehensive check list includes items such as job requirements and conditions; concrete floors; concrete in plastic and hardened state; and curing and surface after-treatments to be considered when specifying concrete and mortar. Also covered is masonry mortar, grouting mortar and mortar for miscellaneous uses. (4 pp.)
AIA FILE NO. 3
MFR: THE MASTER BUILDERS CO.
Circle 322

← Circle 139 for further information

ALUMINUM ENCASED GLASS FIBER AIR DUCT MEETS STRICTEST COMMERCIAL FIRE CODES

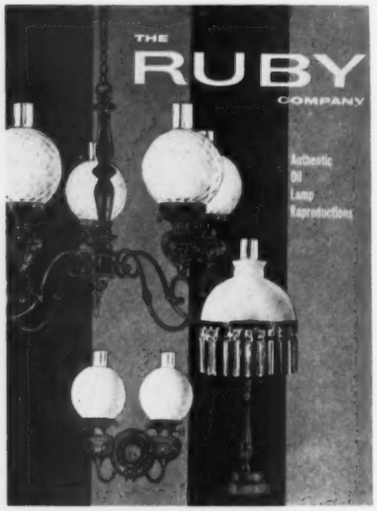
G-B Duct, the round, prefabricated glass fiber air handling system, now meets the most rigid fire codes for commercial air conditioning and heating. Molded entirely of high density glass fiber insulation, G-B Duct is encased in a heavy-duty aluminum jacket that is ultrasonically welded to form an airtight, waterproof seam. Outstanding characteristics of the new duct are "built-in" sound absorption, insulation, and vapor barrier protection. G-B Duct can be installed twice as fast as insulated metal duct, because it is completely prefabricated and can be assembled right on the job site. For complete information write GUSTIN-BACON MFG. CO., 250 W. 10th St., Kansas City, Mo.

Circle 140 for further information

DAMASCUS — 6500
DAMASCUS DRAWING
2H
. . . and not only that . . .
but Damascus is the only line of pencils Electro-Calibrated for exact grading uniformity. That means that the step from one degree to another is always identical. When you reach for a 4H, you get a 4H . . . and when you switch to a 3H, you know exactly what the variation will be. Why not pick up a set—and some leads for your holder, too, they're identical with the pencils."
DAMASCUS DRAWING PENCILS, HOLDERS AND LEADS • TAD ERASERS

Circle 141 for further information

LITERATURE



LAMP REPRODUCTIONS

A company specializing in the manufacture of authentic lamp reproductions is offering a magazine with more than 400 photographs illustrating its line of period lighting pieces. Various models including wall-hanging, free-standing and chandelier types are shown as well as table models. (67 pp.)

AIA FILE NO. 31-F-2

MFR: THE RUBY COMPANY

Circle 323

KITCHEN DESIGN CHART

The *Perspect-O-Graph* is an 8½"x 14" chart showing an "L" shaped cabinet assembly viewed in perspective. Each leg of the "L" represents a 15' length. Vertical lines indicate 12" increments. Horizontal lines show standard counter and cabinet heights. Door and drawer positions are also shown. By following instructions enclosed with chart, various kitchen components can be drawn quickly.

AIA FILE NO. 35-C-12

MFR: WHITEHALL KITCHENS

Circle 324

DECORATIVE LAMINATE

Brochure covers use of a decorative plastic laminate in various applications. Two full pages display 85 swatches of colored and patterned designs with the remainder of booklet devoted to application photographs. (12 pp.)

AIA FILE NO. 28-C

MFR: FORMICA CORP.

Circle 325

ROOF DECK CONSTRUCTION

Technical data for placing vermiculite concrete roof insulation over curved, sloped, or irregular surfaces, such as domes, folded plates, and hyperbolic paraboloids are given. Steel decks and formed or precast structural concrete decks are shown. A table of *U* values and a short form specification are also included.

AIA FILE NO. 37-B-2

ASSN: VERMICULITE INSTITUTE

Circle 326

WOOD USES

USING HARDBOARD

Descriptions, suggested uses, types and sizes of a line of hardboard are covered in literature recently released. Installation photographs and uses of this hardboard in construction under government sponsorship are also included.

AIA FILE NO. BC-L

MFR: FOREST FIBER PRODUCTS CO.

Circle 327

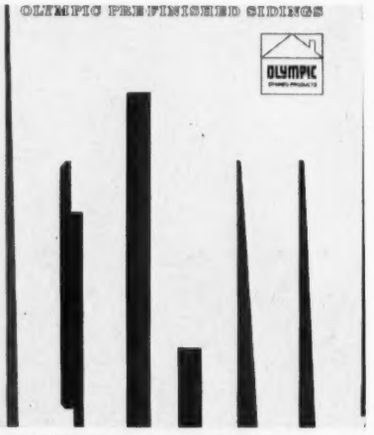
WOOD VINYL FLOORING

A new full-color brochure presents a complete line of wood vinyl for flooring. In addition to showing two room-settings, folder also illustrates large swatches of each of five colors.

AIA FILE NO. 19-E

MFR: AMTICO FLOORING DIV., AMERICAN BILTRITE RUBBER CO.

Circle 328



PRE-FINISHED SIDING

A multi-colored file folder describes seven pre-finished wood products used as siding. Brochure also contains detailed information on materials and applications of each of the seven. (8 pp.)

AIA FILE NO. 19-D-2

MFR: OLYMPIC STAINED PRODUCTS CO.

Circle 329

HVAC

AIR CONDITIONING BROCHURE

Manual describes and illustrates a line of central air-conditioning equipment. In addition to general and mechanical design features, manual offers step by step information to assist in selection of unit type and size, cooling and heating coils, acces-

sories, and determination of fan speed and motor horsepower requirements. Complete charts and tables on selection and dimensional data are also provided. (59 pp.)
AIA FILE NO. 30-A
MFR: MCQUAY, INC.
Circle 330

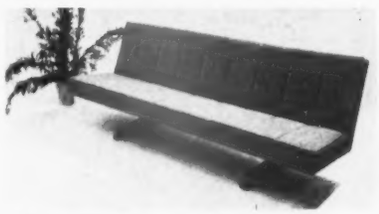
HEATING EQUIPMENT

A new technical brochure is available to consulting engineers engaged in the design of commercial-industrial gas fired heating installations. Brochure deals only with gas and gas-oil equipment and explores the control of draft in gas-fired heating equipment. (32 pp.)
AIA FILE NO. 30-A
MFR: FIELD CONTROL DIV, CONCO ENGINEERING WORKS, INC.
Circle 331

HEAVY DUTY FAN SYSTEMS

New manual discusses construction features of heavy-duty fans and describes available drive arrangements, configurations and types of drive. Specific components such as bearings, dampers, vanes, sound-absorbing bases and drive speed control devices are discussed and illustrated. Outline type drawings are keyed to tabulated dimensional data to provide complete working layout dimensions for every fan in the line. A typical specification is also provided. (43 pp.)
AIA FILE NO. 30-D
MFR: AMERICAN-STANDARD DIV, AMERICAN RADIATOR & STANDARD SANITARY CORP.
Circle 332

FURNISHINGS



COMMERCIAL FURNITURE

Furniture of contemporary design for contract and commercial use is discussed in a recently published brochure. Various models of desks, tables, chairs and couches are shown in addition to a listing of materials. (25 pp.)
AIA FILE NO. 28-B
MFR: JOHN STUART INC.
Circle 333

CONTRACT FURNITURE

A loose-leaf folder on a line of contract furniture features 40 pages of photographs of contemporary de-

Karnak®
"SYSTEM" OF MEMBRANE WATERPROOFING

PROTECTS ALL CONSTRUCTION

THE HIGH quality of KARNAK Waterproofing started with materials conforming to specifications of the American Society of Testing Materials. Through production ingenuity and constant laboratory control, KARNAK developed these materials into the superior waterproofing "system" for long-life protection of any structure.

The KARNAK Waterproofing "System" is based on the use of a carefully-refined and ductile asphalt, reinforced and held in place by a strong interlocking cotton fabric membrane. Only through the use of cotton fabric membrane can the exact thickness of supporting asphalt be secured —and this is the true test of waterproofing protection!

Distinguishing features of KARNAK Waterproofing Fabric are its special open-mesh construction and the method of saturating it that keeps the meshes open. The asphalt material cannot crack up!

KARNAK Waterproofing Fabric unrolls evenly, without distortion . . . can be applied smoothly, wrinkle-free. Each roll is individually packaged in sturdy corrugated cartons, stays in perfect shape until used . . . and can be used right down to the last inch!

FREE! Write for your copy of the KARNAK SPECIFICATION BOOK. It outlines in detail quantities and method of application of the Karnak "System" of Membrane Waterproofing. Please address . . .

ASPHALT KARNAK PRODUCTS TRADE MARK

LEWIS ASPHALT ENGINEERING CORP.
30 CHURCH ST., NEW YORK 7, N. Y.

ASPHALT EMULSIONS • WOOD BLOCK MASTIC • ASPHALT PAINT • MASTIC FLOORING • DAMPPROOFING ROOF COATINGS AND CEMENTS • PLASTER BOND • CORK FINISH • ASPHALT ALUMINUM COATINGS PROTECTIVE COATINGS • WATERPROOFING ASPHALT • WATERPROOFING FABRIC • TILE CEMENT

Circle 142 for further information

FROM RUSSWIN

for the "Continental look" . . . mortise-type locksets with new sag-proof lever handles

Russwin Citation Design 10-Strike Mortise Locks have lever handles specially designed to eliminate sag. You also get 10-Strike versatility: interchangeable, precision-made parts provide variety of functions. Write Russell & Erwin Division, The American Hardware Corp., New Britain, Connecticut.

Circle 143 for further information

Each a Complete Line of Coat Racks

CUSTOM-LINE

The quality line of tubular aluminum hat shelves held in rigid, die-cast arms. Come with extended rails for garment hangers on suspended anchor coat hooks. Shelf arms (single or in tiers) slide in permanent mounting brackets. Polished or anodized finishes. Matching overshoe and luggage shelves.

Illustrated with hanger rail. Also available with staggered die cast hooks.

Checker®

Efficient Welded steel wardrobe equipment standard in auditoriums, public building check rooms, in churches, schools, restaurants, hotels and industry —wherever people gather. Single or double faced floor (stationary or portable) racks and wall racks. Hanger or hook styles. With or without checks.

Veep

Modern tubular aluminum folding racks. Each holds 72 coats and hats. When folded, can wheel thru ordinary door, 10 Veeps (Capacity for 750 people) store in a 5′ x 8′ closet. Just raise counterbalanced shelves to set up.

Write for Bulletin CBN-810

VOGEL-PETERSON CO.

Rt. 83 & Madison St. • Elmhurst, Ill.

Circle 144 for further information

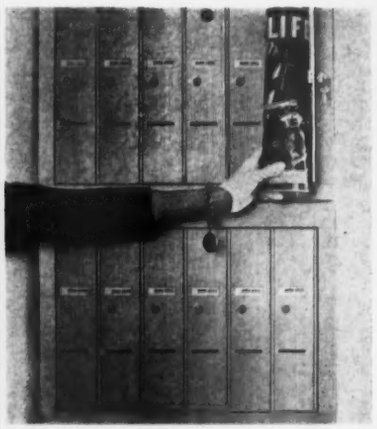
LITERATURE

signs in commercial furniture and swatches of cloth upholstery and leather samples.

AIA FILE NO. 28-A

MFR: DIRECTIONAL CONTACT FURNITURE CORP.

Circle 334



APARTMENT MAILBOX

A line of newly-styled mailboxes designed for use in apartment houses is described in recently released literature. Prices, styles, dimensions, installation procedures and general information are also covered.

AIA FILE NO. 35-H-1

MFR: DURA STEEL PRODUCTS CO.

Circle 335

SHELVING

Handy booklet displays a line of shelving designed mainly for residential use. Also included is a line of shelving accessories. Styling is both contemporary and traditional. (8 pp.)

AIA FILE NO. 28-B

MFR: SHELVES, UNLIMITED

Circle 336

METAL USES

CERAMIC ON STEEL

An exterior covering for industrial and commercial buildings of all types is subject of a new booklet. Complete information of the product, and suggested installation procedures are outlined. (4 pp.)

AIA FILE NO. 17-A

MFR: CALORIC APPLIANCE CORP.

Circle 337

NICKEL/STEEL FLASHINGS

Complete, up-to-date information on the design, specification, fabrication and installation of nickel stainless steel flashings are available in a new booklet. In addition to discussing flashings for both masonry and curtain wall construction, booklet answers questions on properties of

this is a Coil-Wal movable partition

New double Coil-Wal with sound-deadening air space provides maximum sound control. *Consider these exclusive Coil-Wal features:* solid wood slats on multiple airplane cables, fitting together snugly on tongue-and-groove joints—coils like a roll desk top into small vertical storage box.

Coil-Wal costs far less than conventional frame and fabric types. Can be operated manually or with power. Available in a variety of sizes and woods (factory prefinished or laminate wood grains).

COIL-WAL PARTITIONS COMPANY

DIVISION OF DUBUQUE PRODUCTS, INC.

DYERSVILLE, IOWA

Circle 145 for further information

New! Vitreous Enamel in 17 Radiant Colors

Add modern, eye-catching color to tablets and 3-D facade letters by specifying U.S. Bronze hard-fired, vitreous enamel. Available in 17 radiant colors plus black and white—this durable material is hard as granite and smooth as glass—requiring no maintenance or polishing.

Write today for our free illustrated color catalog plus full information on a complete line of lifetime plaques and letters available in 6 metals plus vitreous enamel—at prices to please any budget.

USB

UNITED STATES BRONZE SIGN CO., INC.

(Free Design Service) Dept. AE, 101 W. 31st St., New York 1, N.Y.

Circle 146 for further information

nickel stainless steels and performance for specific flashing jobs. Text is illustrated with 20 detailed drawings based on actual installations. (24 pp.)
AIA FILE NO. 12-H
MFR: THE INTERNATIONAL NICKEL CO., INC.
Circle 338

ORNAMENTAL METAL
Manual on a line of ornamental metal products illustrates furniture, planters, house and yard markers, weathervanes, outdoor lamps, mailbox stands and various other products. (32 pp.)
AIA FILE NO. 15-D
MFR: TENNESSEE FABRICATING CO.
Circle 339

STEEL FRAMING
A new booklet reveals a variety of ideas and applications for framing of storage racks, tables, platforms and other structures of all sizes and shapes. More than 30 illustrations are used. (24 pp.)
AIA FILE NO. 14-G/J
MFR: ACME STEEL CO.
Circle 340

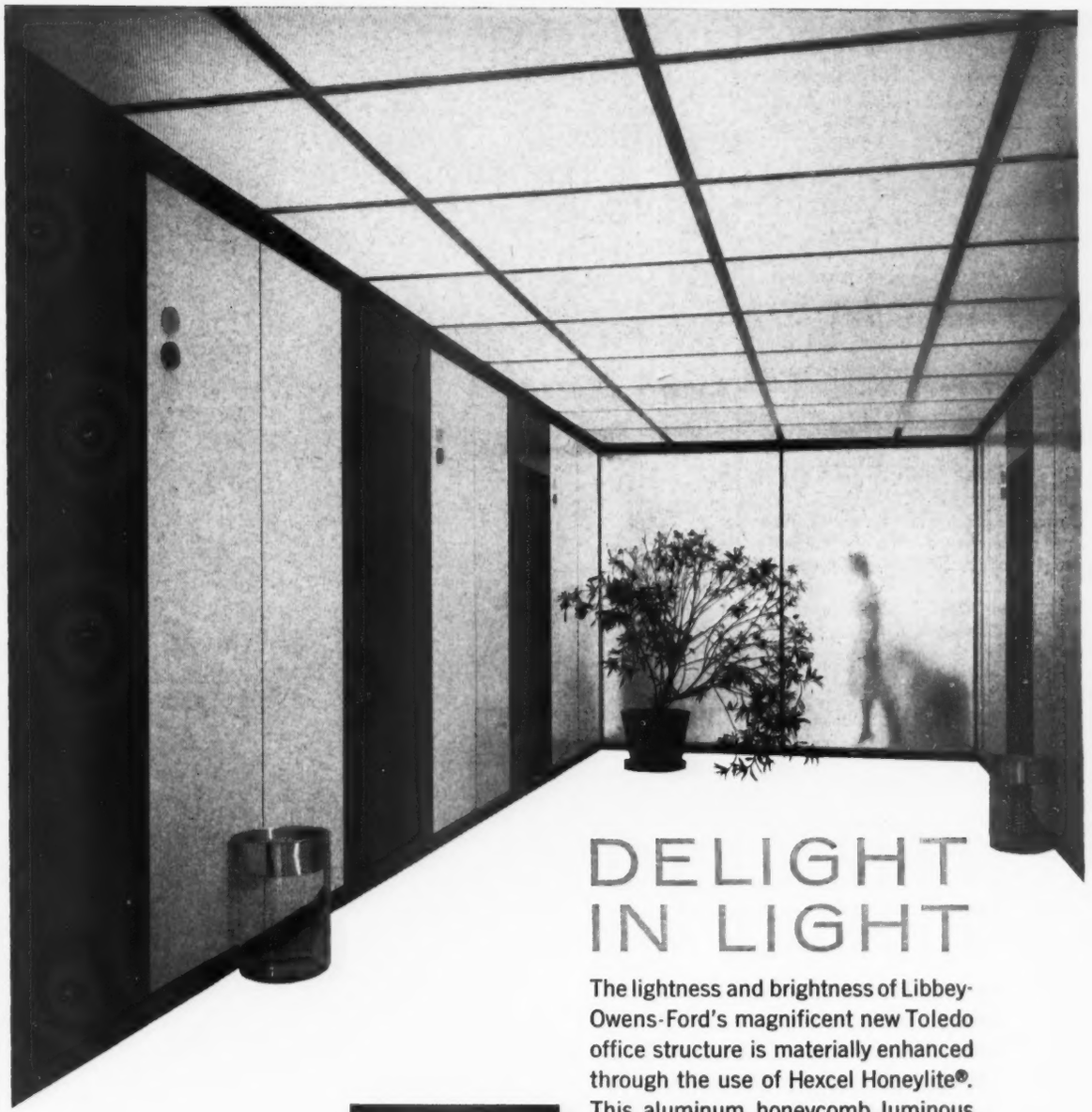
FLOORING

SUB-FLOOR CONSTRUCTION
Brochure designed to aid architects planning for load capacities in subflooring for present and future use. Section property tables, load tables, specifications, framing details, electrification, installation and welding procedures are included. (16 pp.)
AIA FILE NO. 17-A
MFR: THE R. C. MAHON CO.
Circle 341

ACOUSTICAL TILE SAMPLE
Special 5"x8" samples of a glass fiber reinforced polyester acoustical tile have been prepared for distribution to architects. Samples are packaged in envelopes which provide complete technical and rating data. Panels are perforated with 3/16" holes, spaced parallel ½" o.c.
AIA FILE NO. 39-B
MFR: KEMLITE CORP.
Circle 342

WOOD FLOOR PRODUCTS
Producer of wood floor products has released a descriptive brochure on a line of residential and commercial flooring. (12 pp.)
AIA FILE NO. 19-E-9
MFR: E. L. BRUCE CO., INC.
Circle 343

RAISED FLOOR SYSTEMS
Literature covers floor preparation for electronic data processing machines as well as unusual situations in both alteration and new construc-



DELIGHT IN LIGHT

The lightness and brightness of Libbey-Owens-Ford's magnificent new Toledo office structure is materially enhanced through the use of Hexcel Honeylite®. This aluminum honeycomb luminous ceiling system achieves shadow-free, maximum utilization of fluorescent lighting, yet effectively conceals all electrical and mechanical systems. Even air conditioning is installed above the Honeylite panels. All fifteen floors of this installation feature Honeylite ceilings, representing over 120,000 sq. ft. of this totally proven light diffusing system. Owner: Libbey-Owens-Ford, Toledo. Architects: Skidmore, Owings & Merrill. General Contractor: George P. Fuller Company, Electrical Contractor: Rogers Electric, Toledo. For complete Technical Data, send to your nearest Hexcel office.

HEXCEL® PRODUCTS INC.
Stronger, lightweight materials for industry

Executive Offices: 2332 Fourth St., Berkeley 10, Calif.
Plants: Berkeley, Oakland, El Segundo, Calif.; Havre de Grace, Md.
Sales Offices: Inglewood, Calif.; Fort Worth, Texas; Chicago, Ill.; New York, N.Y.; Havre de Grace, Md.
Available in Canada through Curtis Lighting, Ltd., Toronto, Ontario

Circle 147 for further information

LITERATURE

tion programs. Use of raised floor systems is also described (6 pp.)
AIA FILE NO. 14-G
MFR: WASHINGTON ALUMINUM CO., INC.
Circle 344

RUBBER TILE FLOORING

New brochure covers three styles and 62 colors in a line of rubber tile flooring for commercial, institutional and industrial use. Brochure discusses the various colors and illustrates a typical installation. (4 pp.)
AIA FILE NO. 23-G
MFR: THE DANBURY RUBBER CO., INC.
Circle 345

CUSTOMIZED FLOOR TILE

A new illustrated brochure discusses a process to "customize" various types of floor tiles with designs specified by architects or with designs kept in stock.
AIA FILE NO. 23-G
MFR: SHERIDAN-GRAY, INC.
Circle 346

MAPLE FLOORING

A new illustrated folder contains specifications, sizes and grades on AAA maple flooring. Describes end-to-end flooring and other details. (4 pp.)
AIA FILE NO. 19-E-9
MFR: AHONEN LUMBER CO.
Circle 347

PLASTIC USES

SEALS/FASTENERS

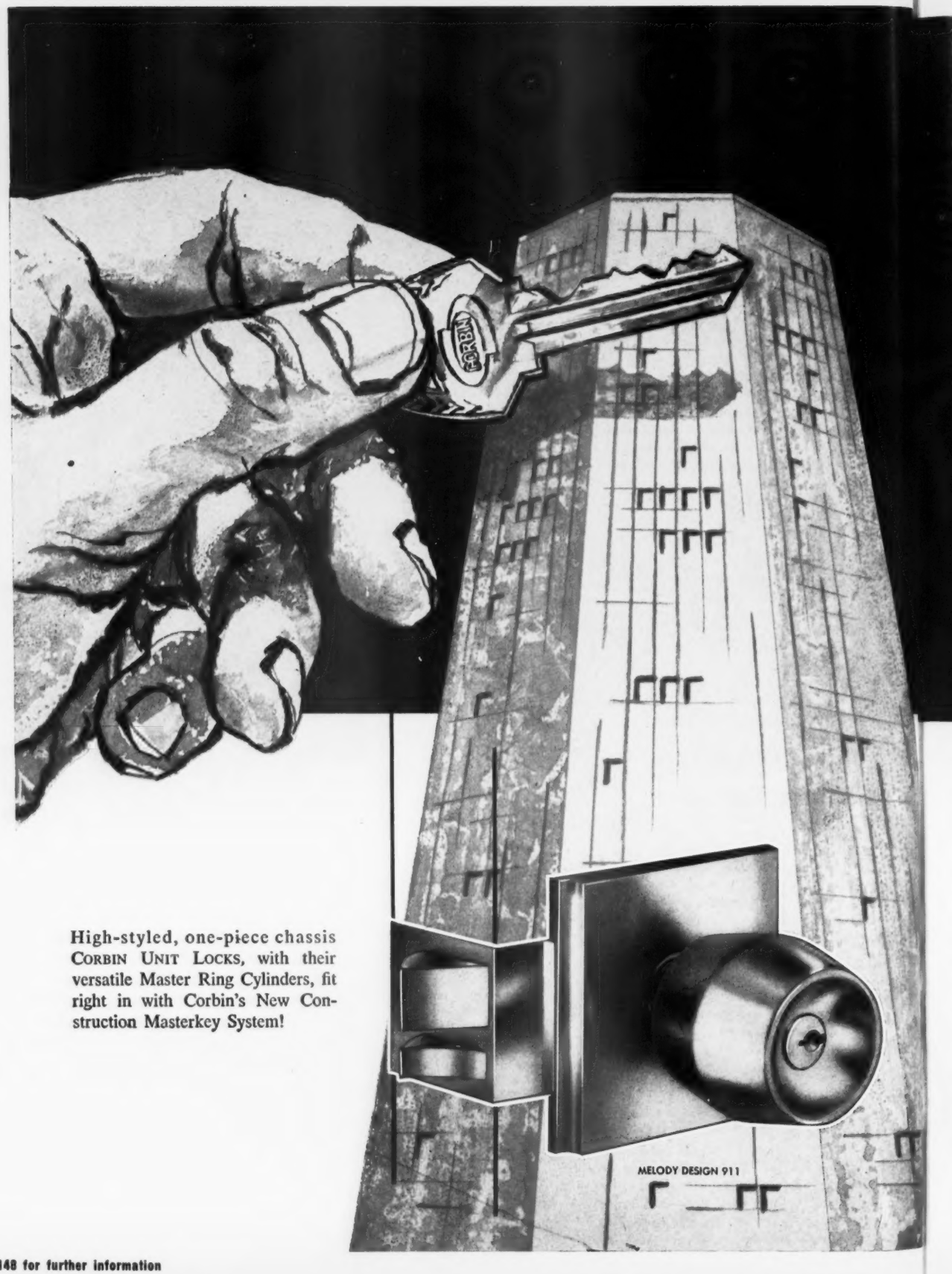
Booklet covers a line of seals and fasteners for commercial and industrial use. Each model line is discussed in detail and illustrated with cross-section drawings. (16 pp.)
AIA FILE NO. 27-A
MFR: A. P. M. CORP.
Circle 348

RIGID FOAM INSULATION

Literature describes a new rigid urethane foam insulation for industrial, commercial and institutional construction.
AIA FILE NO. 37-C-2
MFR: H. E. WERNER, INC.
Circle 349

BUILDING SEALANTS

A complete line of sealants for buildings is discussed in a brochure recently made available to architects. Uses of various sealants, their properties, applications and other detailed data are included.
AIA FILE NO. 17-J
MFR: GENERAL MASTIC CORP.
Circle 350



High-styled, one-piece chassis CORBIN UNIT LOCKS, with their versatile Master Ring Cylinders, fit right in with Corbin's New Construction Masterkey System!

Circle 148 for further information

NEW CONSTRUCTION MASTERKEY SYSTEM by CORBIN

No need for the costly procedure of resetting cylinders . . . Corbin's come up with the simplest answer–a new Construction Masterkey system!

Just put the Owner's Key into the same Corbin Lock that everybody used all through construction. Turn it once, and presto! you have an *entirely new lock system.*

Forget about resetting lock cylinders. Forget about collecting construction keys, they're entirely obsolete. The Owner's Key has done it all–automatically! From now on, only Master, change and regular keys will work.

Here you have a tremendous advantage: time-saving, trouble-saving, cost-saving simplicity. Plus Corbin security–all in "one package"–another example of Corbin superiority! **It pays to make it Corbin–throughout!**

CORBIN®

P. & F. CORBIN DIVISION
THE AMERICAN HARDWARE CORPORATION
NEW BRITAIN, CONNECTICUT

Circle 148 for further information

LITERATURE

MISCELLANY

FLOODLIGHTING STRUCTURES
A newly established organization to promote the use of floodlighting is offering architects a brochure on floodlighting of buildings. Photographs illustrate various notable buildings presently using floodlighting. (4 pp.)
AIA FILE NO. 31-F-22/26
ASSN: FLOODLIGHTING INSTITUTE
Circle 351

STEEL STORAGE RACKS
Use of prefabricated storage rack materials to achieve larger warehousing capacities and greater operating efficiency is described in a new booklet. Text explains prefabricated design of modular rack components and how proper rack installation can utilize maximum warehouse floor space. (16 pp.)
AIA FILE NO. 35-i-15
MFR: ACME STEEL CO.
Circle 352

PROTECTION SYSTEMS
Brochure covers a line of detection and notification devices, control equipment and alarm systems. Also included is a discussion of coding and recording equipment, installations and accessories. (4 pp.)
AIA FILE NO. 31-i-31
MFR: NOTIFIER CORP.
Circle 353

STEAM CLEANING METHODS
A concise compilation of the most modern methods and materials currently used in steam-detergent cleaning is presented for quick reading in a new, illustrated booklet. (4 pp.)
AIA FILE NO. N/A
MFR: OAKITE PRODUCTS, INC.
Circle 354

TEST BORING STANDARDS
Recommended Standard Boring Specification for Cased Borings is designed to help standardize contract specification requirements as well as methods of performing foundation test borings. Standards are designed

NOW! 3 NEW
P&S ROCKER-GLO SWITCHES!
all available in Despard (interchangeable) type or strap type

No. 2211-SL

No. 2221-SP

No. 2225-S

1
LIGHTED HANDLE ROCKER-GLO
- Pinpoints switch location in darkened areas
- Long-life neon lamp glows in OFF position only
- Single pole or three way. Rating: 15 Amps., 120 V, A.C.

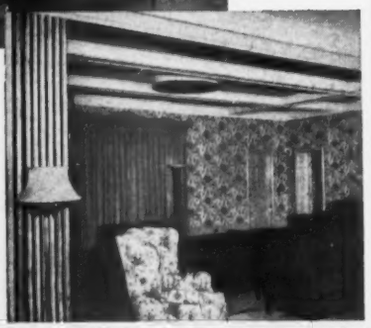
2
PILOT LIGHT HANDLE ROCKER-GLO
- Instantly shows when appliances or lights are on.
- Tiny red jewel lights in ON position only.
- Single pole only. Rating: 15 Amps., 120 V, A.C.

3
REMOTE CONTROL ROCKER-GLO
- Momentary contact, center "off" switch
- Designed especially for low voltage remote control operations
- Single pole, double throw. Rating: 10 Amps., 48 V, A.C.

For more information write Dept. AE961
P&S PASS & SEYMOUR, INC.
SYRACUSE 9, NEW YORK
60 E. 42nd St., New York 17, N.Y. 1440 N. Pulaski Rd., Chicago 51, Ill. In Canada: Renfrew Electric Co., Ltd., Toronto, Ontario
Circle 150 for further information

Fairhurst T.M. Reg. "Unitfold"® Folding Walls for Modern Interiors

The attractive wall shown above is a Unitfold Folding Wall. Solid, rigid, its use makes two rooms out of one in the modern Funeral Chapel of R. Stutzmann & Son, Inc., Queens Village, N.Y. Same view at right shows how wall sections can be quickly folded back to compact, stacked positions . . . making available a single large room. Unitfold walls permit more economical use of space . . . maximum privacy for individual chapel rooms.



John T. Fairhurst Co., Inc.
45 West 45th Street New York 19, N.Y.
Circle 151 for further information

AGITAIR® Decoraire
EXTRUDED ALUMINUM
REGISTERS . . . GRILLES

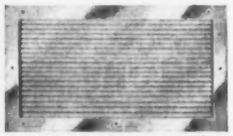
FOR SHEER ARCHITECTURAL BEAUTY AND EFFICIENCY

Whether you use one foot of DECORAIRE or a thousand foot run or more, you can be sure that these extruded aluminum grilles or registers will give maximum performance to assure complete users satisfaction.

DECORAIRE incorporates desirable practical features . . . APPEARANCE . . . PERFORMANCE . . . VERSATILITY to meet the exacting requirements of architects, engineers and contractors.

ALSO A COMPLETE LINE OF REGISTERS – GRILLES

REGISTERS


SIGHT TIGHT GRILLES

GRILLES

To meet every requirement of the architect and designer, there is also available AGITAIR Registers and Grilles in a wide range of sizes and styles.

Ask for catalog R-G-100.

AIR DEVICES INC., 185 MADISON AVE., NEW YORK 16, N. Y.
BETTER PRODUCTS FOR AIR DISTRIBUTION • AIR CLEANING • AIR EXHAUST
Circle 149 for further information

LITERATURE

for greater uniformity and quality of work performed by test boring contractors and help pin down respective responsibilites of test boring contractor and architect. (6 pp.)
AIA FILE NO. 1-D
ASSN: TEST BORING CONTRACTORS ASSOCIATION
Circle 355

LIMESTONE ARCHITECTURE

The use of Alabama limestone in architecture is covered in a new, full-color booklet. The uses of this stone in various types of structures are shown. (12 pp.)
AIA FILE NO. 8-B-2
MFR: THE GEORGIA MARBLE CO.
Circle 356

FACTS ON LEATHER USE

Brochure presents facts in the use of genuine leather. Tensile strength, flexibility, and various grades of leather in addition to a color chart showing the numerous colors available in genuine leather.
AIA FILE NO. 28
ASSN: THE UPHOLSTERY LEATHER GROUP, INC.
Circle 357

SWIMMING POOL FACTS

A new edition of a technical manual containing information on pool care, specification and installation, is available to architects. Manual is designed to aid architects in specifying proper equipment for residential, motel and commercial pools and to help insure perfect installation. (200 pp.)
AIA FILE NO. 35-F-2
MFR: PARAGON SWIMMING POOL CO., INC.
Circle 358

COLOR-PLANNED KITCHENS

A major manufacturer of kitchen appliances is making available to architects information on the planning of color-coordinated kitchens. The planning was done under the supervision of Beatrice West, a color consultant.
AIA FILE NO. N/A
MFR: CALORIC APPLIANCE CORP.
Circle 359

INSURANCE/ROOF TYPES

Literature summarizes a recent study made by an expert in fire insurance. Literature defines the relationship between fire insurance costs and roof construction in various types of buildings.
AIA FILE NO. 37-B-2
ASSN: VERMICULITE INSTITUTE
Circle 360

ABSTRACTS

Architecture on the assembly line?

Last month A/E NEWS *presented excerpts from an address by Pier Luigi Nervi at 6th Congress of the International Union of Architects in London. Theme of the Congress was "New techniques and materials: their impact on architecture." This month we present excerpts from a paper by Jerzy Hryniewiecki, a Polish architect, on the subject: "The effect of industrialization on architecture."*

"In our everyday life we are surrounded by products of industrialization. The clothes we wear, the vehicles we travel in, are all mass-produced; our material requirements are wholly satisfied by products of industry and we ourselves are often replaced by machines. Yet where architecture is concerned, we talk of the *new* significance of industrialization in housing. This alone shows to what extent building technique has lagged behind other fields of production. In an age that bears every sign of complete industrialization, architecture stands almost alone in its outmoded adherence to the principles of craftsmanship and handicrafts.

"Today, when we have already come to make use of many new and splendid materials of industrial origin, even of complete modern fittings, our methods of planning and construction remain as old-fashioned as ever. What we usually refer to as 'industrialized building' is, in fact, 'industrialized craftsmanship', so remote are our present methods of building from the awe-inspiring 'assembly-line' production of motor-cars, refrigerators, television sets and other objects in everyday use.

"Industrialized building means primarily that prefabricated parts predominate to the extent to which there are means of transport available to cope with their size or cranes to support their weight. In the industrialized production of houses, such component parts as windows, doors, floors and plumbing fittings are factory-manufactured.

"We may say that in this field, if in no other, of building, our production has been put on a truly industrial plane; but there can be no true industrialization of the building trade when transport and assembly work are not carried out mechani-

(Continued on page 72)

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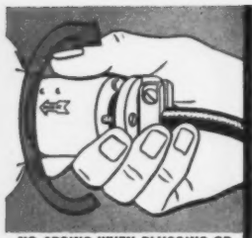
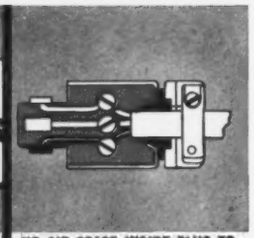


NO ARCING WHEN PLUGGING OR UNPLUGGING. Outlet is electrically "dead" until plug is inserted and rotated 22-25°. Reverse turn disconnects current before plug is removed. Spring pressure and keyed construction prevent accidental disconnection.



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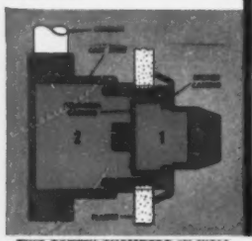
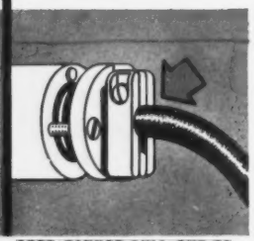


TWO SAFETY CHAMBERS IN WALL OUTLET. Gas-tight chamber No. 1 (bronze and aluminum castings) contains and seals off switching mechanism. Cast iron chamber No. 2 keeps minor internal explosions from spreading to room.



CORD CANNOT PULL OUT OF PLUG. Double-clamping cord-grip relieves strain on plug terminals. And because terminals and wires are completely embedded in insulating resin, connections cannot loosen to cause arcing.

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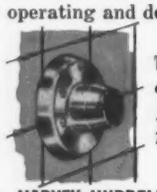

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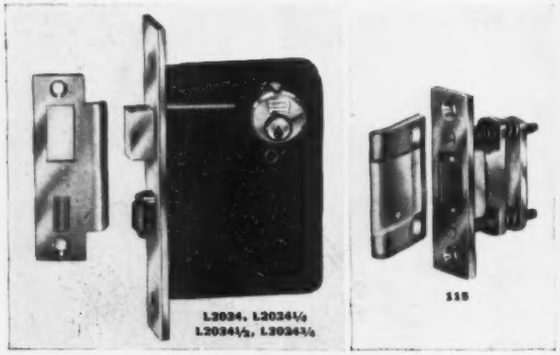

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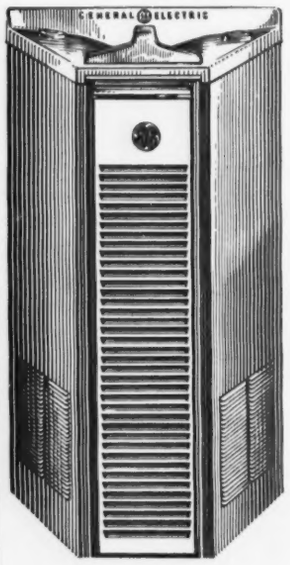

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ABSTRACTS

(Continued from page 71)

cally with machines replacing men. It is very seldom that the above conditions are fully met but we can see at this juncture the road that lies ahead of us. Indeed, the prospects for future progress are most encouraging, particularly in the field of housing and public service.

"It would seem that there are three main trends towards industrialization in building.

"1. The first is in housing, and applies to both one-family houses and large residential blocks of flats. For social and economic reasons far-reaching standardization is in operation and has been in many countries for two or three centuries. There is an increasing tendency to use industrial products in this type of building, particularly in large areas.

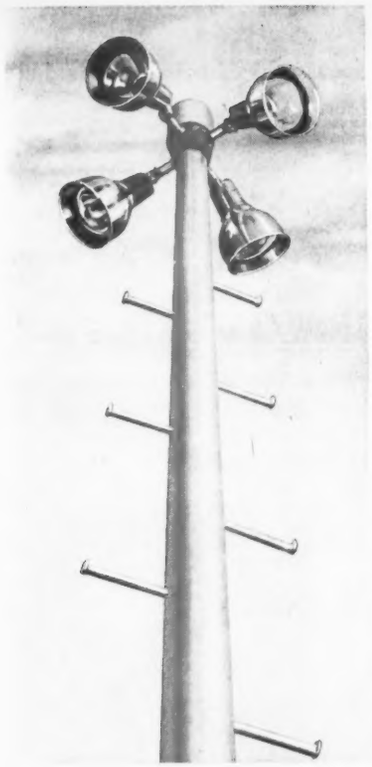
"It is then possible and advisable to build up on the spot large factories for the manufacture of parts and to introduce uniformity of transport and assembly methods.

"2. The second is in the construction of large units serving one purpose only. Here considerations of form must yield to technical methods devised to overcome such problems as may arise. New ideas come into being as to how to make the best possible use of existing material or how to apply methods often borrowed from civil engineering.

"In this type of construction, it is usual to reduce work actually done on the building site to the assembly of manufactured parts brought from factories, steel works, etc. Some of the heavier parts are now being manufactured in the immediate vicinity of the building site where they are treated as independent prefabricated units to be assembled. (The structures of Nervi are a good example of this method.) In this manner something in the nature of a temporary factory comes into existence on the building site and prefabrication takes place on the spot.

"One might say that the heavier the unit and the more difficult it is to transport for reasons of size, shape or possibly fragility, the greater the tendency to manufacture it on the spot. At times it is easier to bring the technical equipment and machinery required to produce certain units

(Continued on page 76)



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DIGEST: 33

CHOOSING A RESILIENT FLOOR: POINTS AND POINTERS

In view of the large variety of resilient flooring available on the market to-day, it has become something of a problem deciding which categories, sizes and colors are best suited to the needs at hand. Other problems include specifying adhesives and installation procedures. A/E NEWS accordingly addressed a series of questions on this subject to Armstrong Cork Company. The questions and answers appear below.

Q *What are the principal existing categories of resilient flooring?*

A The principal categories include: in tile form—asphalt, vinyl-asbestos, rubber, cork, cork tile with fused vinyl coating, homogeneous vinyl with translucent effects, "solid" vinyl tile, Linotile and linoleum tile; in sheet form—linoleum, vinyl sheet flooring with moisture-proof asbestos fiber felt back; vinyl sheet flooring with felt back. These permanent flooring materials should not be confused with non-permanent printed floor coverings. Floor coverings are merely loose laid, whereas the foregoing materials are permanently installed with adhesives.

Q *What new categories, or what new products in existing categories are in prospect?*

A It is impossible definitely to answer this, but through research and development, flooring manufacturers are working to improve existing products and to provide products for new and different applications. The ultimate goal is a universal flooring material combining all physical characteristics for installation over any type of subfloors, regardless of grade level. In the meantime, new colors and design effects will be added to present lines as demands in interior design undergo change.

Q *Which are the ideal conditions for using resilient flooring?*

A Today, modern resilient flooring materials lend themselves to practically any interior. New vinyl materials, new styling in pattern and design and advances in research have made resilient flooring versatile enough for one type or another designed to suit any requirement.

Q *Under which conditions is resilient flooring not recommended? Why?*

A Certain resilient flooring products are not recommended in certain areas. For example, linoleum and other cellulosic are not recommended for on- and below-grade areas, since they will not withstand the harmful, effects of alkali and moisture. However, asphalt, vinyl-asbestos, and rubber tile, as well as certain types of vinyl sheet flooring material, equipped with special moisture resisting backing, are suited for installation on any grade level.

Q *The nature of the subfloor is a very vital element in resilient flooring. In what way does it affect selection of the finished floor material?*

A All resilient flooring materials can be installed on suspended or above-grade subfloors. In on- and below-grade areas, selection of a flooring material is more limited because of the harmful effects of alkali and moisture encountered in these areas. Certain resilient flooring products, however, are inherently suited or equipped with special materials which will resist alkali and moisture.

Q *What problems may be encountered when resilient flooring is used over a concrete slab on grade?*

A Modern building specifications call for more and more concrete slab construction. Most of this construction outside the larger metropolitan areas is concrete slab in direct contact with the ground. Considerable attention has been given to concrete construction because of its direct effect on the behavior of resilient flooring installations. In the course of these studies, certain basic information has come to light which may be generally useful to specifiers of resilient flooring. Several types of moisture conditions exist which should be taken into account in choosing a resilient floor. Because of the deleterious effects of moisture on some types of resilient floors, consideration of the grade level quickly separates wrong from right selections.

Q *Is there a basic inconsistency in using resilient flooring in conjunction with a concrete slab—(a) on grade? (b) above grade?*

A Even though reconcilable, there is basically a conflict between concrete subfloors and resilient floor surfacing. On one hand, concrete is very wet when placed and it dries very slowly. It never dries out completely in certain environments. On the other hand, moisture is harmful to some resilient floors or the bond of some adhesives used to install them.

Impatience because of building schedules can aggravate the situation. Therefore, proper preparation and testing of subfloors and careful selection of resilient flooring materials and adhesives are essential.

Subsequent to the curing of concrete, the next problem is one of drying. This drying, to the extent of eliminating free-liquid water, is essential for the formation of a bond between the adhesives and the inorganic materials of concrete.

In the presence of any liquid water in concrete, water-based adhesives will not set up. In the case of asphaltic adhesives, already bonded to dry concrete, the asphalt will eventually be displaced by water if the availability of water persists.

Aside from the requirements of bonding the flooring material to the concrete, certain flooring products which contain oleoresinous binders or cellulosic fibers need sufficiently dry conditions to prevent mold growth and "after-softening." Specifically these products are linoleum, Linotile and, in below-grade installations, cork tile and custom vinyl cork tile. Even sheet plastic flooring material with felt backing will encourage mold growth because of the cotton and/or wood fibers in the felt backing.

The alkaline salt in solution with moisture which ex-

udes from drying cement or, more particularly, which works its way up from the earth and concrete on and below grade, has, in addition to deteriorating effects, a tendency to prevent or destroy satisfactory bonding of adhesives by sheer physical displacement; also, it may leave unsightly, annoying salt deposits at the seams of sheet materials and joints of tiles.

Q *What clause in a specification can help prevent resilient flooring being injured by the harmful effects of alkali and moisture?*

A No clause in a specification can actually prevent these harmful moisture effects. However, the selection of the proper flooring material that is equipped to withstand moisture will help to eliminate these problems.

Q *What is meant by "after softening?"*

A "After softening" is a condition that occasionally develops in certain flooring materials which contain oleoresinous binders or cellulosic fibers. A softening of this type of material occurs some time after installation as a result of moisture.

Q *What new developments in adhesives and backing fabrics are in prospect to minimize these dangers?*

A Many of these new materials are available today. Water resistant adhesives have been developed for installation of both sheet and tile resilient flooring materials.

These new water resistant adhesives permit installation of rubber tile, vinyl asbestos tile and all types of vinyl tiles in below- and on-grade level areas. As regards backing fabrics, Hydrocord, a moisture resistant backing composed of latex and asbestos fibers, has been made available within the last three years for sheet vinyl flooring materials. This backing is not installed separately but is actually part of the flooring material itself.

Q *Having decided in favor of a resilient flooring material, what further considerations should the architect take into account in selecting a specific resilient flooring category?*

A Essentially, there are three considerations the architect must take into account: functional requirements of the floor, cost, and the visual qualities desired. Relative functional and cost information concerning all types of resilient flooring material are included in chart A.

Q *Which categories of resilient flooring are particularly suitable for consistent heavy foot traffic?*

A In heavy traffic areas, the first consideration is the gauge of the wear layer. The second consideration is whether or not the wear pattern of the material persists through the wear layer; with all other things equal the relative ability of various materials can be determined by their individual "durability" ratings as shown in chart A.

Tough, dense vinyl is designed to withstand massive foot traffic, and because thickness greatly determines wear, heavy gauge vinyl materials should be specified for heavy traffic areas. Heavy gauge, 1/8", linoleum is another heavy duty floor that is often chosen for such areas. Linotile, a specially processed cellulosic base material, is designed specifically for heavy traffic areas.

Q *What is the story on the ladies' spiked heel?*

A Indentation of resilient flooring results only from concentrated weight. For example, the penetrating pressure of furniture legs is known as "static load," and impact from women's spiked heels is known as "dynamic load." The static load limits of resilient floors are known and since the probable weight of occupied furniture can be calculated, the use of furniture rests or cups should be indicated.

Impact loads, on the other hand, are not measurable because of the infinite number of variables. An interesting illustration of this point is that a 120-pound woman with spike heels exerts about two tons of force and has the effect of driving a nail into the flooring. On the other hand, a fifteen-ton Sherman tank with its weight distributed over wide treads would do little or no damage. Other than a change in women's shoe styles, the remedy lies in a wide selection of materials. Certain resilient flooring materials have been developed that are resistant to the "pock-mark" effects of stiletto heels, for example certain materials in the vinyl and linoleum groups. Impact indentation also can be camouflaged by the right floor choice. Some resilient floors are manufactured with a nubbly or embossed surface. These surfaces, with patterns in a small scale, also have a matte finish—all of which tend to conceal the indentations.

Q *How do various types of resilient flooring rate in resisting other common hazards tending to mar or discolor the floor?*

A The relative performance of various types of resilient flooring material can be compared in chart A under the categories of "durability," "grease resistance" and "ease of maintenance."

Q *How do various types of resilient flooring rate in terms of impact noise transmission?*

A Generally, the transmission of impact noise will depend on the resiliency of the flooring material. The more resilient the flooring material, the lower the impact noise transmission. For comparative resiliency ratings of various types of resilient flooring, consult "rating in order of resiliency" in chart A.

Q *How about fire-resistance?*

A None of the resilient flooring materials will support combustion. However, this must not be construed to mean that resilient flooring material will actually retard fire. The vinyl materials, being thermoplastic, will melt under extreme heat, but they still will not support combustion.

Q *Cork tile is often recommended in libraries to deaden footfalls. On the other hand maintenance is sometimes criticized as being very high. Is it possible to reconcile the two?*

A Yes. A special cork tile with a fused vinyl coating, offers much of the quietness of tile and is also one of the easiest to maintain of all resilient flooring materials. Its relative quietness is above average even though it is not rated as high as cork tile.

Recently some manufacturers have improved the maintenance characteristics of cork tile by including a vinyl binder, without affecting the "relative quietness" rating.

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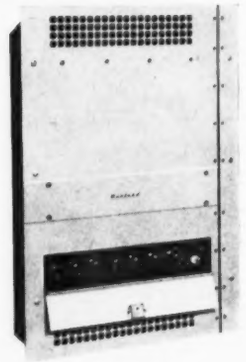

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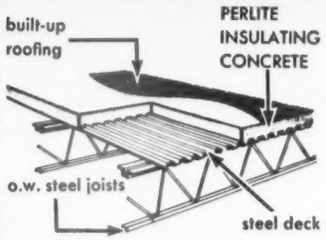

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CHART A. CLASSIFICATION AND PROPERTIES OF RESILIENT FLOORING

Type of floor	Gauges	Approximate installed price per sq. ft. (a)	Basic materials	Backing materials	Subfloor application (b)	Static load limit (c) (psi)	Rating in order of resilience (d)	Relative quietness	Durability (e)	Grease resistance (e)	Surface alkali resistance (e)	Ease of maintenance (e)
Linoleum	Heavy (⅛") (.125")	40-65 cents	Cork and/or wood flour and oleoresinous compounds	Burlap	A	75	4	4	3	1	5	3
Vinyl sheet flooring	.090"	85-90 cents	Vinyl resins	Hydro-cord (asbestos fiber felt)	A-O-B	75	4	4	2	2	2	3
Linotile	⅛" (.125")	75-80 cents	Cork and/or wood flour and oleoresinous compounds, specially processed	None	A	200	5	4	1	1	5	1
Homogeneous vinyl tile	⅛" (.125")	90 cents-$1.10	Vinyl resins	None	A-O-B	200	2	2	1	2	1	3
Homogeneous vinyl tile with translucent effects	⅛" (.125")	$1.90-$2.00	Transparent, translucent and/or opaque vinyl resins	None	A-O-B	200	5	5	1	2	1	2
Rubber tile	⅛" (.125")	60-65 cents	Rubber compounds	None	A-O-B	200	2	2	2	3	-	3
Cork tile	⅛" (.125") 3/16" (.1875") and 5/16" (.3125")	60-95 cents	Raw cork and resins	None	A-O (f)	75	1	1	5	4	4	5
Cork tile, with fused vinyl coating	⅛" (.125")	$1.50-$1.60	Raw cork and vinyl plastic resins	None	A-O (f)	125	3	3	4	2	3	1
Vinyl-asbestos tile	⅛" (.125")	40-45 cents	Vinyl resins and asbestos fibers	None	A-O-B	25	6	6	2	2	2	2
Asphalt tile	⅛" (.125")	25-30 cents	Resin, asphaltic compounds and asbestos fibers	None	A-O-B	25	7	6	3	5	2	4
Greaseproof asphalt tile	⅛" (.125")	35-50 cents	Resin, asphaltic compounds and asbestos fibers	None	A-O-B	25	7	6	3	2	2	4

a For minimum area of 1,000 sq. ft. over concrete.
b A - Above grade; O - On grade; B - Below grade.
c Bearing surface — lbs. per sq. in. or resistance to indentation.
d Potential underfoot comfort.
e Numerals indicate subjective ratings from 1 (highest) to 5 (lowest); relative rank each floor to others listed above. Ratings are not directly related to any one test; rather, they are broadly based on Armstrong tests and experience under varying conditions and circumstances.
f Under certain conditions.

Q *When do functional considerations (as opposed to aesthetic) suggest use of tile over sheet flooring, and vice versa?*

A Functionally, tile flooring may be chosen ahead of sheet flooring if an extremely quiet floor is desired, i.e., cork tile; occasionally in regard to ease of maintenance (most of the vinyl tile materials and Linotile are rated slightly higher than sheet flooring); and some tile flooring is rated higher than sheet flooring in respect to resilience and durability. Another advantage of tile flooring is in rooms where the floor is unusually irregular in contour (i.e., cut up by juts and recesses); in such cases tile can sometimes be installed with less waste than sheet material. When a floor must remain as clean as possible and most easily decontaminated,

(Continued on page 76)

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(Continued from page 75)

For example, in an area 48′ x 60′, pockets for contamination add up to more than three miles of cracks or joints in a wood floor; and more than a mile in a 9″ x 9″ tile floor. This is an important consideration in hospitals and in "clean" or "white" rooms of scientific establishments, where maximum sterility and effective decontamination from radioactive particles are essential. Sheet materials can also be coved or "flashed" up the wall so as to provide a smooth, flowing surface which avoids dirt traps at the juncture of the floor and wall, and permits parts of lower wall surfaces to be cleaned in one continuous operation.

Q *Which categories is it advisable to select for use in spaces where a build up of static electricity could cause explosions?*

A Conductive asphalt tile is made by some manufacturers to prevent a build up of static electricity. However, one of the basic ingredients of this type of material is graphite, which tends to complicate maintenance of this type of floor. On the other hand, wax and soap change the conductivity of the surface, as does dirt.

Q *Which color groups are least likely to show dust and "tracked in" dirt?*

A This will depend in part on geographical location. In metropolitan areas where dust is dark, a darker floor is better. In agricultural areas, where lighter dirt is encountered a beige floor may be better. In general, floors with patterns are easier to take care of than plain colors, and the medium depths in the beige family are generally considered the most satisfactory.

Q *Which color groups are most resistant to discoloration by sun's rays? Which least?*

A Exposure to strong sunlight may affect the performance and appearance of some types of resilient floors by causing fading, shrinking, brittleness, or chalking. Resilient floors in sheet form, both linoleum and vinyl plastic, and Linotile are considered most resistant to such deterioration.

Pigments are, of course, the limiting factor in the fade-resistant properties of most resilient flooring materials, but great improvement in color stability has been made in recent years, especially where reds and blues are concerned.

Neutral colors such as grays and tans show the best light resistance. Pastel tones, especially yellows, reds and pinks, are poorest in retaining their colorings under prolonged exposure to the actinic rays of sunlight. Cork tile has the same tendency as natural wood to fade under strong sunlight.

Q *If high light reflectivity is desired, has a method been evolved which will reconcile this with the need to hide dirt?*

A No, there is no compromise in this area except in color, pattern and texture versus light reflectivity value. Industrial, educational, medical, and other institutional authorities are becoming increasingly aware of the effects of the brightness and quality of sight. As a consequence, the light reflectivity factor of resilient floors takes on additional importance. Apart from its effect on the light level of the room, *gloss* has a considerable influence on the appearance of the finished floor. Very glossy flooring materials tend to show up minor irregularities in the subfloor surfaces and, therefore require careful subfloor preparation and inspection.

Extra maintenance care also is required. In rooms where the light reflectance of the floor is important, practically any light reflectance value can be obtained by choosing the correct pattern from the various types of resilient floors available.

Q *How do various tile categories rate in terms of initial cost and maintenance?*

A a) Initial cost (labor and materials) in ascending order—asphalt, vinyl-asbestos, linoleum, rubber tile, cork tile, "solid" vinyl tile, cork tile with fused vinyl coating, and homogeneous tile with translucent effect. (For approximate installed prices see chart A.)

b) Maintenance—consult chart A.

Q *Does tile color itself affect cost?*

A Only in the case of asphalt tile. The darker shades of asphalt tile are less expensive than the lighter colors.

Q *To what extent would an architect's decision to use a multiple color scheme affect cost?*

A Cost would be affected only slightly in tile. Cost of a multiple color arrangement would increase only if asphalt tile were used or if custom insets were used in sheet flooring; this would then raise the installation costs from "slightly" to "considerably," depending on the complexity of the custom design.

Q *What are the effects of air-conditioning on tile, during and after tile installation?*

A Usually an air-conditioning system will affect drying of subfloors favorably because, particularly in summer, large quantities of water are removed from the air by such systems. But because drying rates of concrete subfloors as well as bond and drying rates of water based adhesives are directly affected by relative humidity, it follows that air-conditioning can have adverse effects or, at least, delay schedules to a certain extent.

A concrete subfloor must be given adequate drying time before resilient flooring is installed. It is recommended that before air-conditioning is put into operation, the subfloor be allowed to dry normally.

Moisture in a damp plenum chamber, or humid room, will often be drawn up into the subfloor by an air-conditioned room above it.

Specifiers should provide for a polyethylene sheet or other moisture-impregnable material just below or within the concrete floor to prevent this occurrence. An alternative is to use floors safe for installation below grade and on grade.

Q *Many tile are thermoplastic. In view of this, what is the danger of heat radiated from the surface of a concrete slab causing damage to the tile?*

A Observations have shown that floor heat, within the limits commonly recommended for radiant heating, has no harmful effect on either the resilient flooring or the adhesives used in installation, provided the temperature of the floor does not exceed 85° F.

ABSTRACTS

(Continued from page 72)

to the site than to keep on delivering units, one after another, from the factory.

"Hence there are two clearly defined tendencies in the prefabrication of building components: permanent factories with well organized transport systems, and, on the other hand, mobile factories.

"3. The third is in industrial projects with many parts that are found in factories and workshops spread over very large areas and are in no way 'individual' or original. Here industrialization takes two forms: many prefabricated units are transported to the building sites but some, usually the heaviest, are prefabricated next to the sites."

Role and responsibility

The recent annual convention of the New Jersey Society of Architects (A/E NEWS, *Aug. 1961*) *centered about the subject of Responsibility, and elicited a healthy amount of blunt talk. The following excerpt is taken from the speech by Harry M. Prince FAIA, of New York.*

"Is the architect performing his professional duties in accordance with Institute standards, when he certifies upon completion of a structure that it is in full accord with his plans and specifications when he is fully aware that substitutions have been made by the owner during construction without his advice or consent or should we recognize that possibly there is something wrong. Wrong, not only inside the profession, but outside as well. If the level of remuneration we receive from our client-owner is not adequate, then are we morally wrong in accepting a low commission to perform an incomplete service when we know in advance the fee inadequacy makes it impossible for us to fulfill our responsibilities and obligations.

"While I reiterate my disagreement as to the coming bust in the real estate boom, predicted by Mr. Friedenberg *(Harper's Magazine, June 1961)*, I do venture an opinion that unless we submit ourselves to a re-evaluation and self-analysis, we will certainly find a growing appeal to owners to use unit design-construction services, on the assumption they will receive a greater degree of

responsibility from the architect-engineer-builder. This is, of course, a fallacy, for even with some apparent weakness, the architect of integrity—and he is still in the great majority—holds his responsibility to his client-owner as a professional duty and trust to be maintained impartially, unmarked by any selfish profit motive. . . "

The old unproductive ways

How far these have been left behind is discussed in part of a recent speech by A. Allan Bates, former ASTM president.

"The explosive expansion of science and technology is the basic motivating and controlling force in the 20th-century development of American life. All other forces toward change are derivative and secondary. But some of these are so direct that they can be considered separately. Foremost among these is the vast increase in wealth which arises from the broadening mass applications of advancing science and technology. These mass production procedures are possible only if the resulting wealth is widely distributed. This is just a way of saying that practically everyone in America is now so well paid that we can afford to hire no one to labor in the old unproductive traditional ways. The route from raw material to finished product is therefore made as short as possible and all intermediate labor is eliminated or diminished to the minimum. As part of this trend, the materials producer tends to be a manufacturer of semi-finished products ready for final assembly. This may or may not lessen the demand for standardization of materials, but it certainly increases the pressure for standards governing intermediate or end products. Thus we find ASTM developing standards not only for plastics but also for zippers, not only for cements and concretes but also for pavements of standard skid resistance! Life promises to become complex indeed for an ASTM which is already the world's most complicated tcehnical society. The industrial diplomacy which our successors must exercise in the committees, the boards, and the offices of ASTM will have to be of at least as high quality as that devoted to our nation's international relationships. Let no cynic express the hope that it may be even higher."

(Continued on page 78)

Oakland Auditorium, Oakland, California. Interior by Division of Architecture, City of Oakland Department of Public Works.

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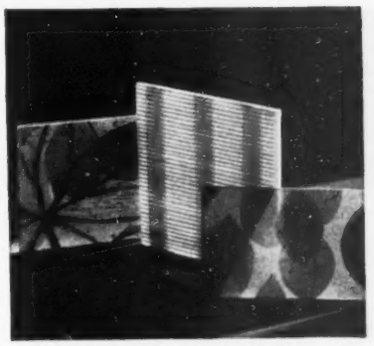

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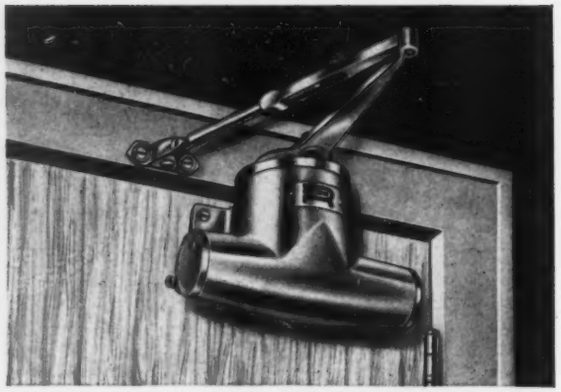

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ABSTRACTS

(Continued from page 77)

Choice of a location

A well-established community is preferable for any project to house elderly people, according to E. N. Turano AIA. This preference and reasons behind it form part of a recent speech.

"My first choice of a location would be an already established community. It would not have to be a run down slum area about to be or already condemned and awaiting redevelopment. It could be a 20- or 30-year-old community with all the normal community facilities established, and the very fact that new construction or remodeling is taking place could kick off an entire neighborhood rehabilitation program—privately financed.

"Here are some of the reasons why such a site is my first choice:

1 There are younger people around. The old people would not feel completely isolated, they would be near activity, but they would have their homes to withdraw to when they want rest and quiet. The ideal state of "independent but integrated" shelter situation is most easily accomplished in an established community.

2 More than likely they have lived in the neighborhood for quite a long while, and all their friends and acquaintances are there—so we could spare them the shock of complete relocation.

3 Public transportation is close by and convenient, as would be churches, variety and drug stores, grocery stores or supermarkets, beauty and barber shops, movie houses and other areas of activity—older people like to look and watch as well as participate.

4 An established community is likely to have a few neat, clean, friendly eating places. The single older person finds that often it is less expensive to eat out than to buy the variety of groceries. Also, eating out is a social event, a treat.

5 There is the strong likelihood that the elderly would want to participate in community activity, among people they have known for a long time. This activity is a perfect substitute for lost stature in the occupational sphere. By making it possible for older people to find friends, to find a place and a role to fill in a group, we can lessen the shock that comes through death of family and friends, a shock that sometimes triggers or accelerates the aging process. . . ."

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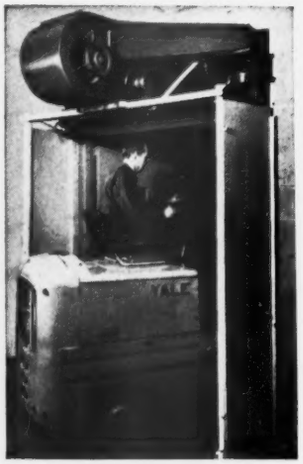

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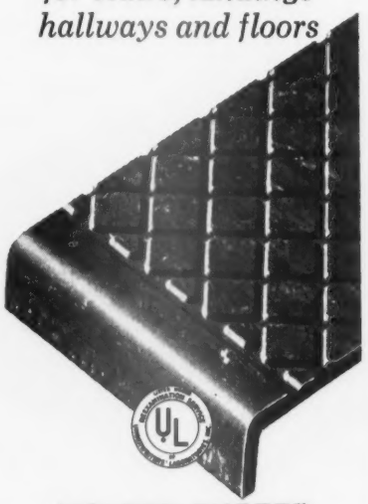

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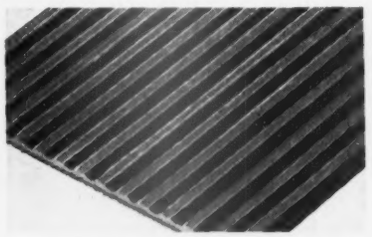

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DOCUMENTS

The documents listed below are available through the associations and agencies cited. All requests should be directed accordingly.

School Planning Laboratory, Stanford University, Stanford, Calif.

Space for Teachers, *prepared and illustrated by Raymond C. Schneider, July 1961. 24 pp. 25 cents. Single copy—no charge.*

Booklet is the first of a planned series on basic ideas and concepts involving planning space for educational facilities.

The Relationship of Initial School Plant Cost and Compactness in Secondary School Buildings, *H. William Meadville, July 1961. 79 pp. $2.00.*

This report, the fourth in a series by the School Planning Laboratory, is a complete dissertation on the subject. Includes charts and graphs illustrating material discussed.

The Asphalt Institute, Campus, University of Maryland, College Park, Md.

Soils Manual for Design of Asphalt Pavement Structures, *June 1961. 245 pp. single copy—no charge, additional copies—80 cents.*

Contains chapters on the general classification of soils, and determination of strength values for design of asphalt pavement structures, Includes numerous charts and illustrations of tests and findings, plus appendices on testing procedures and materials specifications.

Superintendent of Documents, U. S. Government Printing Office, Washington 25, D.C.

Units of Weights and Measures *(United States Customary and Metric) — Definitions and Tables of Equivalents, National Bureau of Standards Miscellaneous Publication 233 (supersedes Miscellaneous Publication 214). 1960. 20 pp. 40¢.*

Revised edition is based on the 1959 agreement among the directors of National Standards Laboratories of English speaking countries to obtain uniformity in precise measurements involving the yard and pound, which brought about refinements in the definition of the U. S. customary units of length and mass.

(Continued on page 80)

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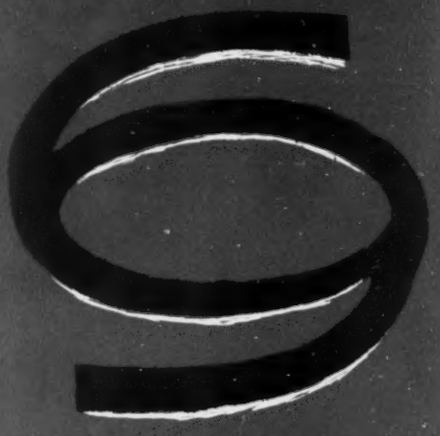

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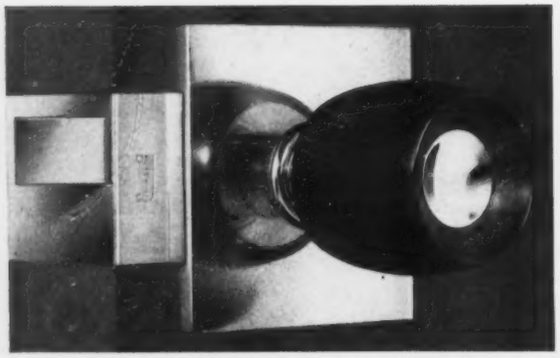

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(Continued from page 79)

Professional Manpower and Education in Communist China *by Leo A. Orleans. 1961. $2.00.*

This report was prepared under a National Science Foundation grant to the Library of Congress, and is the result of two years of analysis and evaluation of material. From this analysis emerges a picture of impressive national progress toward increased industrial productivity through a massive education and manpower training effort. Of specific interest are figures on numbers of professionals graduating each year. The extent and importance of Soviet cooperation is discussed.

Capital Expenditures for Research and Development in Colleges and Universities, Fiscal Year 1958 *Reviews of Data on Research and Development, No. 28, July 1961, 5 cents.*

Reviews the sources of funds for research and development, both public and private, and the disposition of these funds according to fields of study, for the year 1958.

Soil Compaction for Buildings, *Survey of Practice Report No. 2, NAS Publication No. 784. 1961. $2.00.*

This report is based on replies from Federal agencies to a questionnaire about the extent of experience with soil compaction, design practices and procedures related to compaction, and methods used to solve certain specific soils problems.

Capacities of Stacks in Sanitary Drainage Systems for Buildings, *by Robert S. Wyly and Herbert N. Eaton, National Bureau of Standards Monograph 31, issued July 1961. 52 pp. $0.35.*

Discusses some of the results obtained in investigations of capacities of plumbing stacks in test systems at the NBS and elsewhere. Includes data on water and air flow in such systems, analyses of flow phenomena, and loading tables for drainage and vent stacks.

U. S. Department of Commerce, Washington 25, D. C.

1960 Census of Housing. Advance Reports on Housing Characteristics of States. *Each report 15¢; complete set of 51 reports, $6.00. Alabama, HC-A1-1, 9 pp.; Arkansas,*

(Continued on page 84)

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PREVIEW: 34

MARINA CITY	PROJECT
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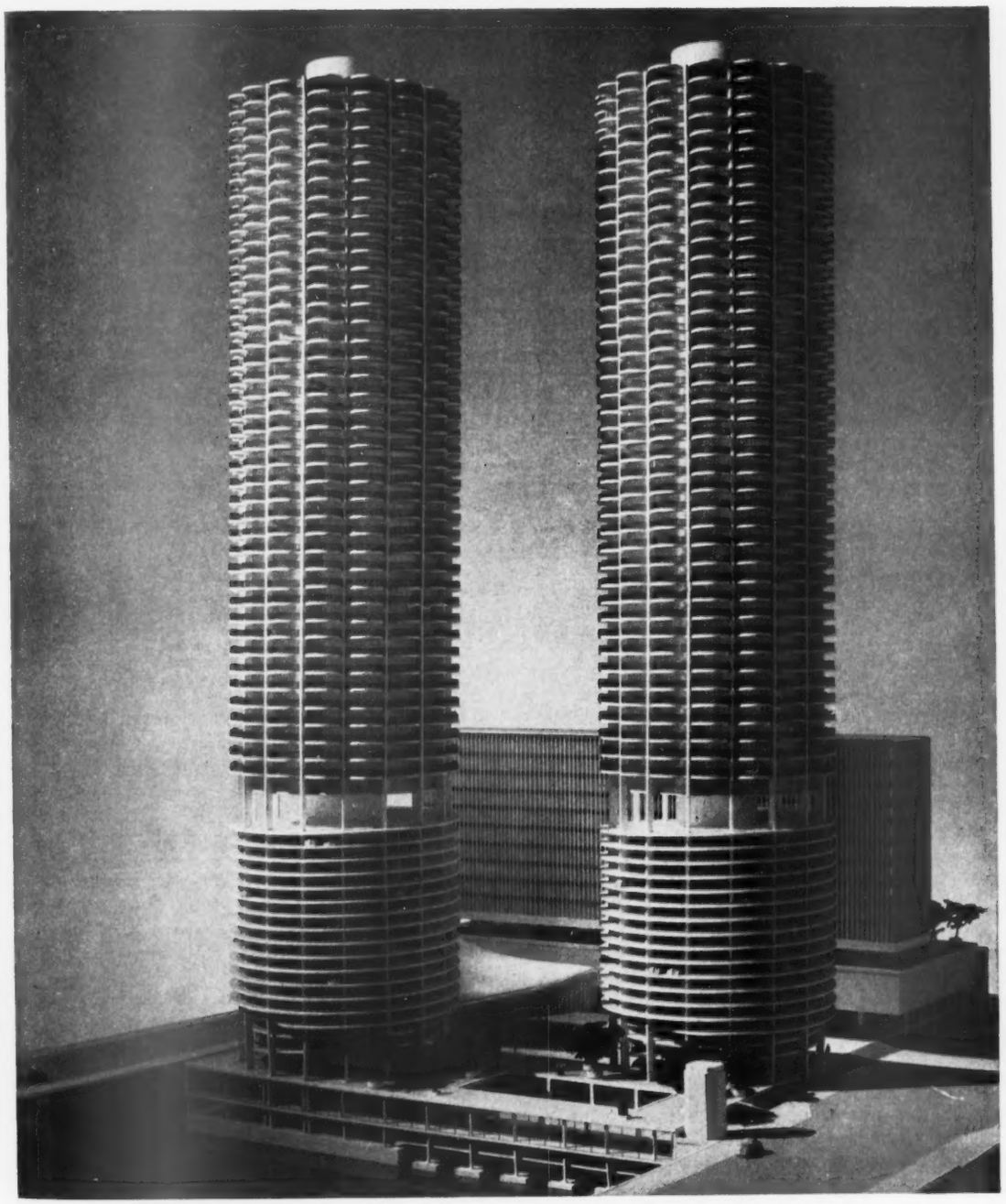


MODEL OF PROJECT SEEN FROM SOUTHEAST. Photo by Bill Engdahl, Hedrich-Blessing.

The new Marina City project, under construction on the north bank of the Chicago River in Chicago, will incorporate, in addition to the marina for 600 boats below the plaza level, two apartment towers, an office building, theater, bowling alley and a commercial area (see site plan, p. 85).

The apartment towers, the most striking part of the project, are circular structures rising 60 stories above the plaza and include a 16 story spiral ramp for parking, with living space beginning on the twentieth floor.

The 317′ by 400′ site for Marina City is located between the State Street and Dearborn Street viaducts, slightly north of the Loop.

The two story marina, which forms the first floor of the project, is located at water level below the viaducts. Topping the marina is the plaza, which is at street level and forms the base for all the buildings.

The office building, 15 stories high plus penthouse, will be located at the north side of the project and will serve as a backdrop for the apartment towers as well as a screen for older buildings to the north.

Located on the plaza and between the office building and the apartment towers will be the theater. The bowling area forms the fourth floor of the base, being above the plaza.

The marina will be 317′ by 387′, the apartment towers 128′ in diameter, the office building 317′ by 60′, the theater 165′ by 90′ and the commercial area 274′ by 122′.

The plaza level is open primarily towards the Chicago River and the Loop, to the south, and Lake Michigan, to the east.

Pedestrian access will be from State and Dearborn Streets on the east and west sides, up to bridge level (third floor) and down to street level (second floor). Automobile access will be from State and Dearborn. Streets up ramps to bridge level and parking ramps. Truck access will be from Kinzie Street on the north side down ramps to the marina level (first floor).

Orientation

The project faces the Chicago River on the south and is depressed approximately 26 feet below viaduct level. The Chicago Northwestern Railroad will continue to run across the property, dividing the lower levels into two portions.

The plaza faces the river and the buildings of the downtown area, to the south and east. The

base structure, below the plaza, contains, in addition to the marina, lobbies, restaurants, health club, skating rink, and shops.

Facing materials

These are reinforced concrete structures, with all exterior concrete left exposed. Curtain walls and store-fronts generally are glass with aluminum frames and mullions. Stucco walls are to be used on the end walls of the office building and in some areas of the commercial structure located below the office building.

Structural features

Structural systems in Marina City vary and were designed to fit the specific requirements of the different components. In general, the structures are of reinforced concrete except in certain areas where the loading and headroom limitations require the use of structural steel.

In the apartment buildings the structural framing system is a central cylindrical shaft enclosing elevators, stairs, smoke shaft and piping. The inside diameter is 32′ and the wall thickness varies from 20″ at the base to 12″ at the top. There are two series of 16 columns spaced equally in two concentric rings.

Semi-circular balconies project from the exterior ring of columns. Radial beams, haunched at the columns, frame from the exterior columns to the central shaft. The balcony girder is also haunched for torsional and bending stresses. The slab is 5″ thick and spans between the radial beams.

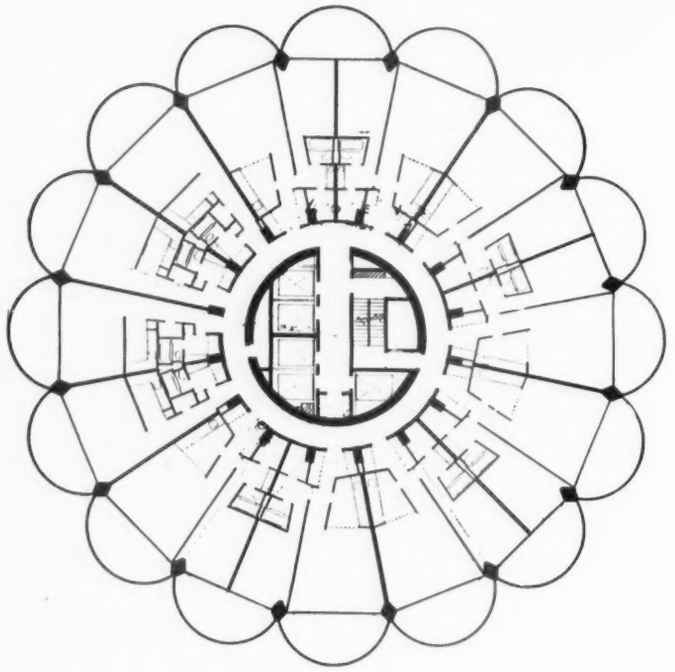
The floor slab and beam are cast with lightweight aggregate; the columns and shaft walls are regular stone aggregate.

In the garage, the same system of radial beams is used. The floor is a continuous ramp, making one complete revolution in an 8′-6″ story height.

Wind bracing

Wind bracing of the towers is effected by a combination of the rigidities of the circular central shaft and the portal frame of the radial beams and columns. The computed deflection of the tower, taking into account the varying modulus of elasticity of the light weight aggregate and the stone aggregate as well as the relative stiffness of the circular shaft and the frames, is less than 7″. This represents approximately .001 times the height and was considered small enough for physical comfort.

The main tower columns in the lower 24 stories are reinforced with high strength 14S and 18S bars. Ordinarily such bars would be butt welded with a wedge shape cut, in the field. The time involved for such welding would have slowed down construction considerably; a suitable prefabrication procedure was therefore devised. Bars are milled to bear on steel plates, milled on the outside surface and bottom, and are preassembled in the shop. To allow for inaccuracies a steel plate, milled on both sides, is inserted between the assemblies.



APARTMENT TOWER: PLAN OF TYPICAL FLOOR

The transfers of the high strength bars into the caissons, which also had high strength bar dowels, required that the caisson dowels be field milled and receive the column load through a steel bearing plate, milled both sides. The field milling was performed with special equipment to a tolerance of .01″.

Connection to the concrete shaft is of two types. Where the reactions are heavy, they are made to steel plates anchored in the shaft wall. Where they are light there is a box cut in the wall and screw bolts are used to anchor into the wall.

The towers and substructure are supported on caissons which are cored into the limestone rock about 110′ below grade.

Load bearing mullions

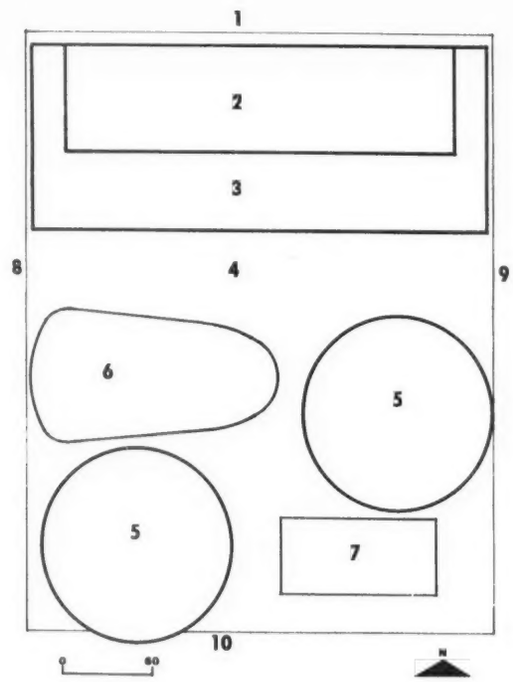
The office and commercial building is framed in reinforced concrete. The top ten stories are for office use and the framing is two 30′ span concrete joists to a center row of beam and columns. At the exterior the joists frame into load bearing concrete mullions, 2′-8¾″ on center. Each mullion carries an equal load and all joists and mullions are the same size.

The lower stories are of flat slab and two-way slab design. At the sixth floor, the framing system is changed and the center row of columns is supported on concrete "A" frames.

Theater roof on cables

The theater roof consists of fiber glass decking supported by catenary cables, which are anchored in a concrete ring shaped for proper sight lines and acoustics. The ring is balanced on a concrete wall on each side and anchored into concrete girders on the stage side.

The two-story substructure is generally a flat slab design except in the tower areas where the radial and circumferential beams support concrete slabs.



KEY
1 Kinzie Street
2 Office building
3 Commercial building
4 Private street
5 Apartment tower
6 Theater building
7 Depressed skating rink
8 Dearborn Street
9 State Street
10 Chicago River

SITE PLAN

Mechanical system

The apartments are heated by electrical baseboard radiation and cooled by room air conditioners, with the automatic temperature controls for both heating and cooling integrated in one package. Additional heating and ventilation are obtained through electric coils in the air conditioners, taking air from outdoors or rooms or both. Corridor make up air is obtained by air-to-air heat pump systems with supplementary electric heaters.

Commercial areas are heated and cooled by air-to-air and air-to-water heat pump systems with supplementary heaters. Air distribution is through a conventional low velocity duct system. Where floors are exposed, and over open areas, a system of air ducts will be cast in the slab and the room isolated by an air floor, with the air transmitted through the floor being ultimately distributed in the room. When an air floor is not practicable, electric heating cables will be used for temperature isolation.

The office building is heated by electrical baseboard radiation in conjunction with high output electrical lamps. In addition to radiant heat obtained from the lamps, recirculated air from the air distribution system will be returned through the light fixtures for heat pickup. Cooling will be accomplished by self-contained air conditioners, interlocked with the baseboard radiation for an integral, heating and cooling, automatic temperature control system.

Electrical notes

Primary electric service will be 12,000 volt, three phase, four wire, carried to the top of each tower in a cable shaft. The emergency system for corridor and stair lights consists of several two-pole, double throw contactors, with relays, connected to adjacent secondary systems, so that if one system fails, service is automatically transferred to the other system.

The primary switch room, on Dearborn Street, will distribute 12,000 volts, underground, to each tower and to a submerged vault for the lower three floors in the base structure. Duplicate primary feeders will be run to each of the towers and the submerged vault.

Power distribution will be at 480 volts, three phase, four wire, and 120/208 volts, three phase, four wire. Lighting distribution for commercial tenant areas will be at 120/208 volts, three phase, four wire, and 120/240 volts, one phase, three wire. Lighting distribution for apartment tenants will be at 120/240 volts, one phase, three wire.

Illumination

The lighting system consists largely of specially built fixtures, designed by the architect. Each tower penthouse cylinder will be floodlighted by means of 16-300 watt PAR 56 uplights on 24″ bracket arms. The parking ramp outer columns will have 150 watt PAR 38 uplights, and the runner columns have 60 watt incandescent lamps to illuminate the exposed core surface.

The marina level will be illuminated by 60 watt high output fluorescent tubes, and the peripheral fence "safety-lit" with 150 watt R40 flood lamps.

The main building lobby (concourse) at street level will have incandescent wall-wash fixtures and flush downlights and the elevator lobbies at street level will have "parahex" luminous ceilings at 100 foot candles.

Undersides of the boat-slips are to have continuous submersible fixtures with 40 watt rapid-start lamps shining on the water.

Vertical transportation

Each apartment tower has five elevators, all electric, gearless and with automatic controls. Two will be low-rise, 700 fpm passenger elevators serving all floors up to the fortieth; two will be high-rise, 1000 fpm passenger elevators, serving the forty-first to the sixty-first floors, and one will be a 1000 fpm combination passenger and freight elevator serving all floors.

The office building will contain five elevators serving all floors, and the lower level will have three hydraulic elevators for service use.

There will be two sets of escalators: one set extending from the plaza level entrance to the residential area, and one set rising to the bowling alley floor. A man-lift in each apartment building will enable parking attendants to reach the various levels of ramps.

All window cleaning will be done from sidewalk, platform or balconies, except in the office building, which will have a platform suspended from a self-propelled electric hoist unit mounted on tracks on the roof.

Cost

Cost of the portion now under contract (the apartment towers and the base structure south of the railroad) will be $10.32 per square foot and $1.17 per cubic foot.

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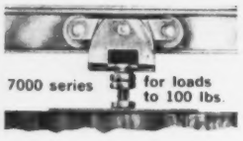

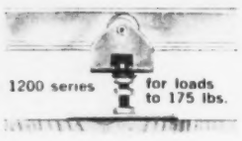

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Circle 170 for further information

DOCUMENTS

(Continued from page 80)

HC-A1-4, 7 pp.; Delaware, HC-A1-8, 6 pp.; District of Columbia, HC-A1-9, 5 pp.; Georgia, HC-A1-11, 10 pp.; Iowa, HC-A1-16, 9 pp.; Minnesota, HC-A1-24, 9 pp.; Rhode Island, HC-A1-40, 7 pp.; South Carolina, HC-A1-41, 7 pp.; Washington, HC-A1-48, 8 pp.

Final statistics on housing units by tenure, color, and vacancy status; number of rooms; number of persons; contract monthly rent, etc.

Central Business District Reports, *for information on the CBD series, comprising separate reports for principal standard metropolitan statistical areas, write for announcement and order form 3-123, 1958 Census of Business, CBD Reports.*

CBD reports, now being issued as publications of the 1958 Census of Business, present for the first time statistics for selected major or retail centers outside the central business districts. For such centers, data is given on number of stores and volume of sales for three major groups of stores and on number of stores only for 25 kinds of business.

Discussion on Problems of Soil Consolidation and of Shearing Resistance of Soils *(60-21147). 1960. 5 pp. 50¢*

A presentation of Soviet civil engineering material.

Spray-in-Place Shelters, *PB 161 780. March 1960. 30 pp. $1.00.*

Machinery Set Up for Planning Highway - Urban Redevelopment Projects, *NR: G 61-38. No charge.*

Surface and Environmental Effects on Ceramic Materials, *PB 171 074. August 1960. 24 pp. 75¢.*

American Society for Testing Materials, 1916 Race St., Philadelphia 3, Pa.

Compilation of ASTM Specifications on Steel Piping Materials, *A-1. 1960. 524 pp. $7.00.*

Covers specifications on: (1) pipe used to convey liquids, vapors, and gases at normal and elevated temperatures; (2) still tubes for refin-

(Continued on page 87)

Circle 233 for further information about SJOSTROM →

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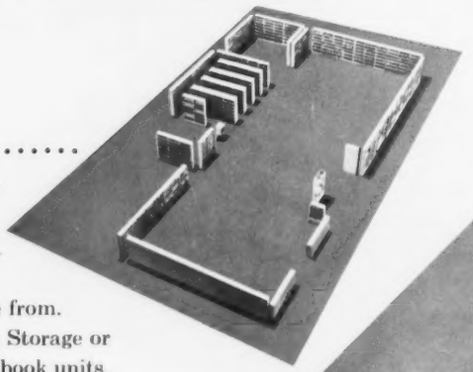

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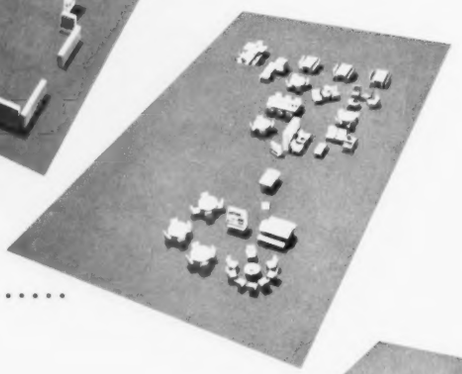

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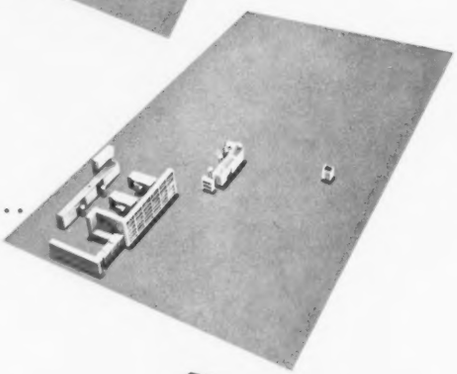

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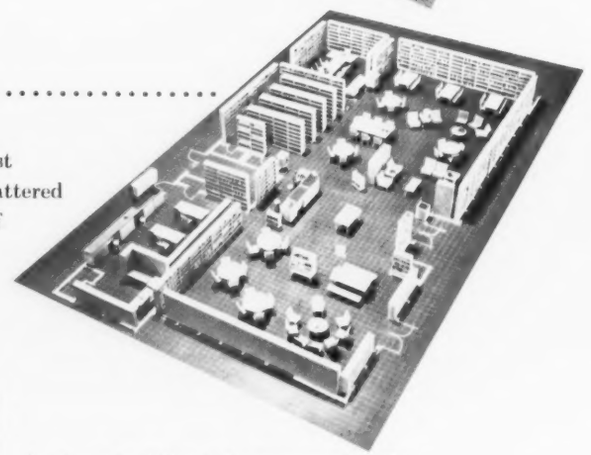

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DOCUMENTS

(Continued from page 84)

ery service; (3) heat exchanger and condenser tubes; and (4) boiler, superheater, and economizer tubes. It also covers specifications for castings, forgings, bolting, and welding fittings used in such installations. Over half of the approximately 70 specifications included in this book have been revised since the 1959 edition was published.

Compilation of ASTM Standards on Gypsum Products and Plaster Aggregates, *C-11. 1960. 152 pp. $2.75.*

Contains 16 specifications, 11 methods of test, and four sets of definitions relating to gypsum products and plaster aggregates and related standards. Specifications for gypsum backing board and the method of test for surface burning characteristics of building materials have been added since the previous edition.

Compilation of ASTM Standards on Petroleum Products & Lubricants, D-2, *Volume II, 1961. 686 pp. $7.50.*

Includes standards on bituminous road and paving materials; bituminous materials for roofing, waterproofing, and related building or industrial uses; paint, varnish, lacquer and related products; wax polishes and related materials; and others totaling 173 in all.

Compilation of ASTM Standards on Bituminous Materials for Highway Construction, Waterproofing and Roofing, *D-4, D-8. 1960. 474 pp. $5.50.*

This volume contains over 100 specifications, methods of testing and definitions which serve as a guide to the production and use of bituminous materials both in highway construction and in building construction. Over 40 standards are new, revised or have had their status changed since the compilation was last issued in 1958.

Compilation of ASTM Standards on Cement, *C-1. 1960. 288 pp. $4.00.*

Includes eight specifications, 26 methods of test and several definitions. Methods added since the previous edition cover false set of Portland cement (paste method), fineness of hydraulic cement by the No. 325 sieve, and potential sulfate resistance of Portland cement.

(Continued on page 88)

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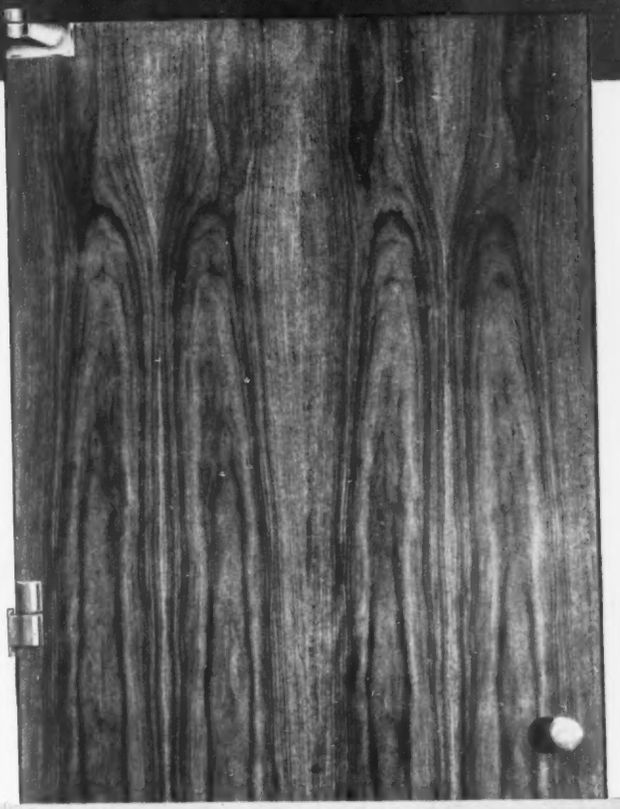

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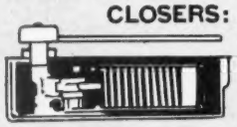

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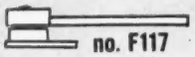

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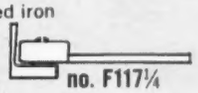

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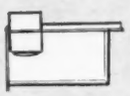
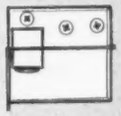


no. F280 half surface

no. F480 full surface



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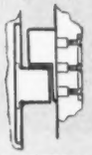

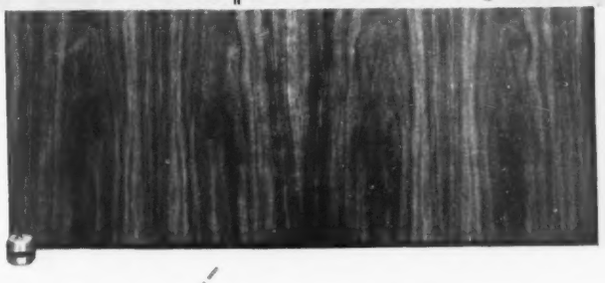

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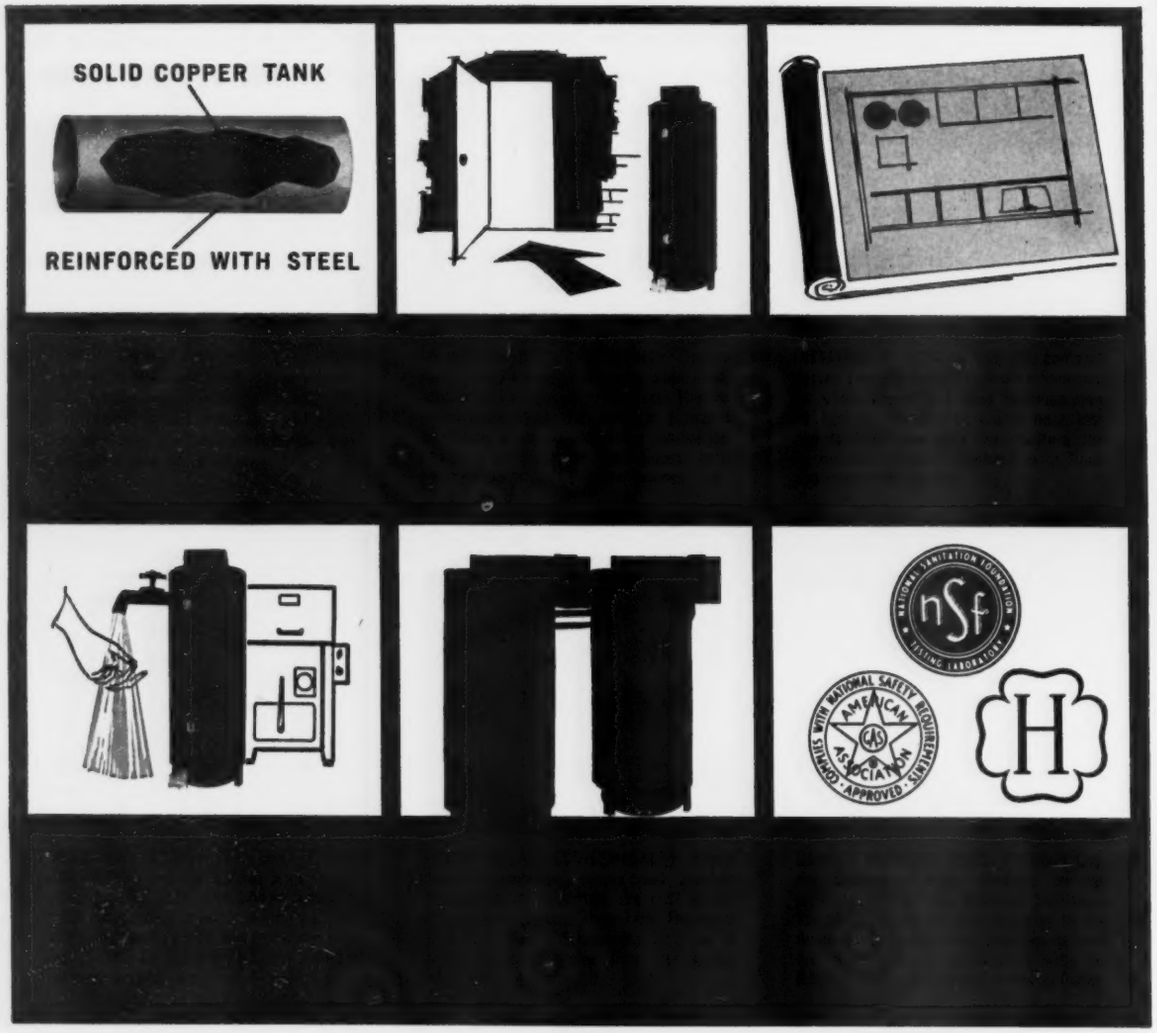

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DOCUMENTS

(Continued from page 87)

Electrical Information Publications, 2132 Fordem Ave., Madison 1, Wis.

Electric Heating Fact Book, *Fifth Edition, 1961. 67 pp. $1.00.*
A guide to 292 illustrated listings of 60 manufacturers of electric comfort heating equipment, heat pumps and controls.

The Operations Council, American Trucking Assns., Inc., 1616 P St., N. W., Washington 6, D. C.

Portfolio of Motor Freight Terminals Constructed in 1960, *1961. 28 pp. $4.95.*
Contains photographs of both large and small terminals constructed throughout the country in 1960. Includes such information as: location; community served; type of terminal operation; construction cost; size of pot; number of employees; dock features; construction material used; apron surfacing; parking area space; exterior illumination; and maintenance facilities.

National Electrical Manufacturers Association, 155 East 44th St., New York 17, N.Y.

Cooling Load Estimate Form for Room Air Conditioners, *developed by the room air conditioner section of the NEMA, July 1961. 50 cents.*
Designed to eliminate guess work on the part of electrical appliance dealers in estimating customers' cooling load requirements for room air conditioners. Formula contains all factors considered necessary to determine total cooling loads. The form also includes a map showing climatic differences in all parts of the country.

AIEE-FEMA-NEMA Standards Publication for Arc Furnace Transformers, *TR 17-1960. $.70.*
Joint publication covering electrical characteristics and mechanical features of three-phase, 60-cycle, two-winding, mineral-oil-immersed indoor transformers rated 250 to 35,000 kva, inclusive, high voltage 2,400 to 34,400 v, inclusive, used for supplying electric power to direct arc ferrous-melting furnaces.

Automatic Temperature Controls *(Nameplate Information, Ampere Ratings, Voltage Rating and Load*

(Continued on page 89)

DOCUMENTS

(Continued from page 88)

Characteristics) *DC 6-1961. 25¢*
This revised publication covers nameplate information, ampere ratings, voltage rating and load characteristics of automatic temperature controls.

EEI-NEMA Standards for Distribution Transformers, Overhead Type *—Seventh Report, TR 2-1960 (EEI 60-54). $1.25.*
Contains design standards for certain mechanical and electrical features of overhead-type single and three-phase distribution transformers rated 500 kva and smaller, high voltage 67,000 volts and below, low voltage 15,000 volts and below.

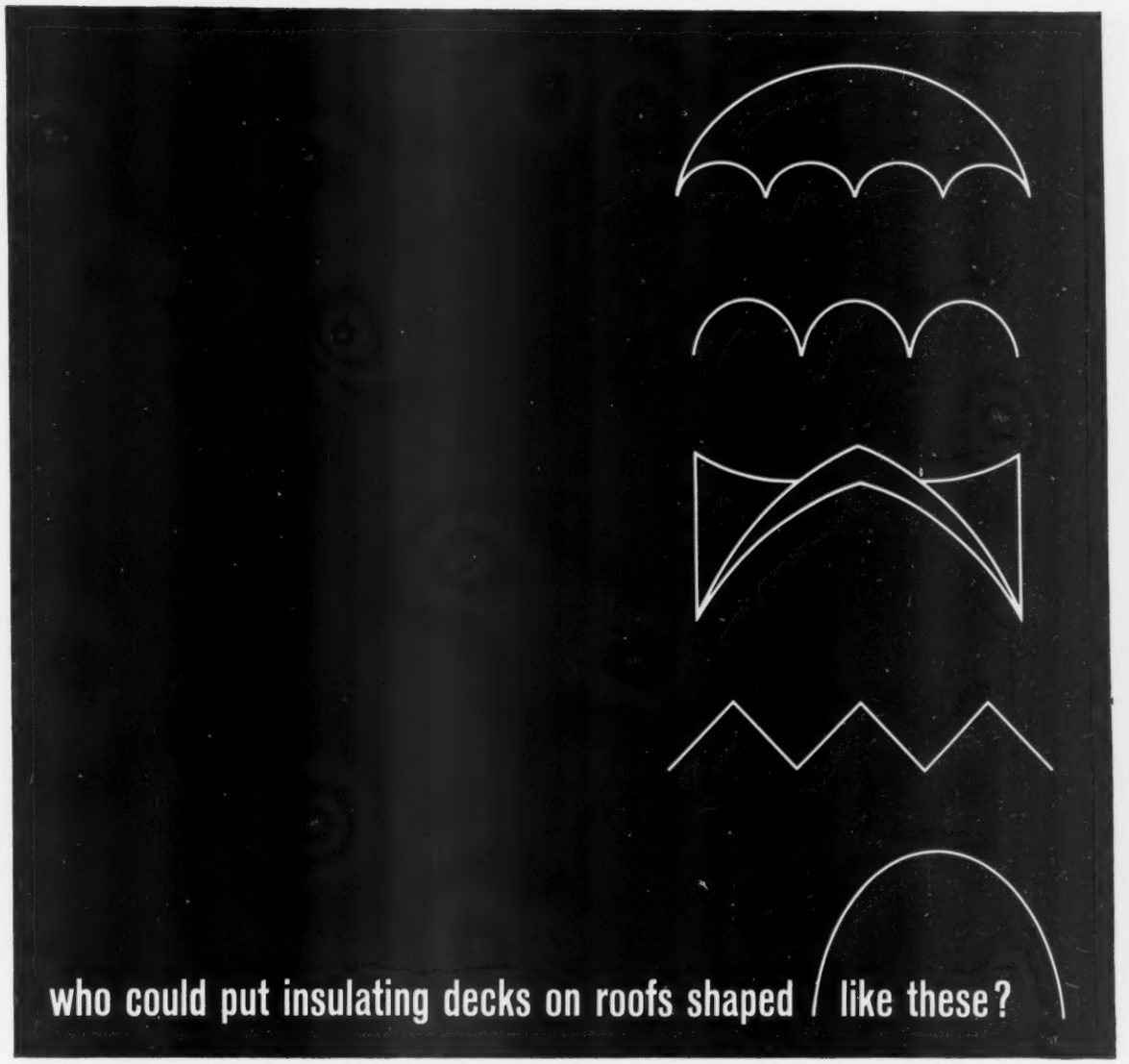
AEIC-EEI-NEMA Standards for Watthour Meter Sockets, *EI 17-1960. $.75.*
Covers the salient features of die-cast, stamped, ring and box or trough-type watthour meter sockets, rated at 200 amps or less and 600 v. or less, ac, that are required to meet certain standards of dimensions, design and workmanship to secure interchangeability and good quality in watthour meter sockets for use with standard detachable-type watthour meters, demand meters, time switches, instruments and similar devices or combinations thereof.

Electric Comfort Heating Equipment, *HE 2-1961. 35¢*
Contains the latest definitions, ratings, markings, methods of test, performance, safety and durability of electric space heating equipment of the types principally used in residences, such as baseboard heaters, wall heaters and heating cable.

Household Electric Dishwashers, *HS 1-1961. 25¢*
The place setting for determining the capacity and the test method for determining the washing ability of household electric dishwashers are described in this booklet. Also covered is the size of a dishwasher drain connection to a food waste disposer.

Conduit and Cable Fittings and Accessories, *FB 1-1960. $.40.*
Fittings and accessories for flexible metallic conduit, service entrance cable, armored cable and nonmetallic sheathed cable are covered. Also

(Continued on page 90)



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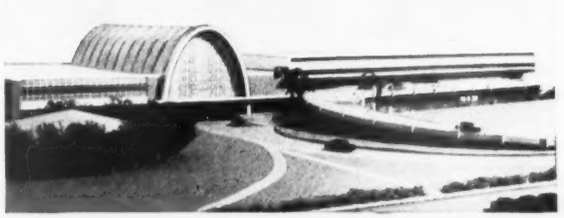

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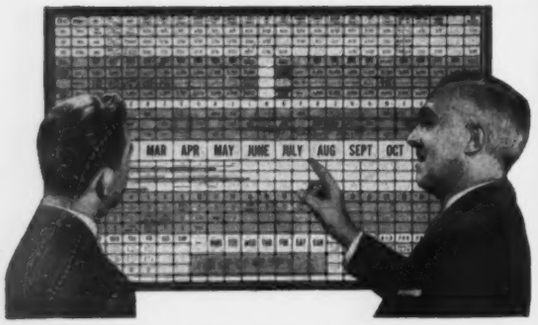

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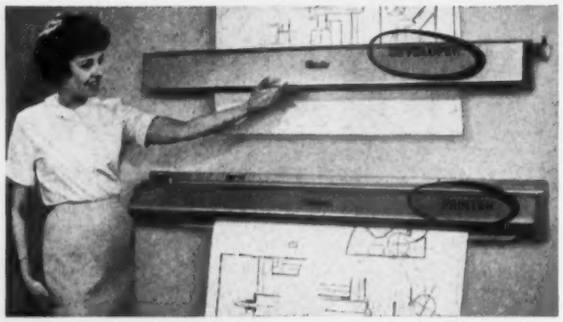

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DOCUMENTS

(Continued from page 89)

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Definitions for Industrial Automatic Systems, *AS 1-1961. 35¢*

Industrial Heating Units and Devices, *HU 1-1961. 35¢*
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Power Switching Equipment, *SG 6-1960. $3.00.*
Information given on rating, performance, testing and application of air and interrupter switches, bus supports, accessories and outdoor stations. Includes instructions on installation, operation and care of equipment.

Standards Engineer Society, 1025 Connecticut Ave., N. W., Washington 6, D. C.

The Proceedings of the Ninth Annual Meeting "Standardization Applied." *1961. 86 pp. $5.00. Copies may be obtained through M. M. Hoagland, c/o Leeds & Northrup Co., 4901 Stenton Ave., Philadelphia 44, Penna.*
A presentation of papers dealing with the physical aspect of applying standards and describing the preparation and format of standards manuals, numbering systems, coding systems, and decimal dimensioning.

Flexible Unicellular Insulation Manufacturers Task Force, 342 Madison Ave., New York 17, N. Y.

Federal Interim Specification for Flexible Unicellular Thermal Insulation, *HH-I-00573 (GSA-FSS). 1961*
This new specification for flexible unicellular thermal insulation covers use of the material in both tube and sheet form.

American Wood Preservers Institute, 111 W. Washington St., Chicago 2, Ill.

Pressure Treated Timber Foundation Piles for Permanent Structures, *edited by C. Miles Burpee, 1961. 62 pp. $1.50.*
Provides a broad range of working

(Continued on page 91)

DOCUMENTS

(Continued from page 90)

information on timber piles in design and construction for foundation engineers. Includes a review of risks in using untreated timber as well as specifications for selection of timber, preservatives and treatment. Foundation design and driving data are also covered.

Symposium on Treated Wood for Marine Use, *STP 275. 1960. 70 pp. $2.50.*

A major problem in harbor development and especially in maintenance is the prevention of marine borers from seriously shortening the life of wood piling. This symposium deals with various treatments which attempt to meet this problem. Well illustrated with numerous references.

Strength and Related Properties of Wood Poles, *STP 295. 1961. 182 pp. $5.00.*

In addition to 60 pages of discussion and explanation of the many factors involved in the testing of wood poles, there are 82 tables of data covering the testing of some 600 full-size treated and untreated poles and over 14,000 small, clear specimens from the pole material.

Better Light Better Sight Bureau, 750 Third Ave., New York 17, N.Y.

Lighting for Industry, *B-570, 1961. 16 pp. 25¢.*

Addressed to plant executives, this booklet describes in non-technical language, the reasons for the new higher lighting levels recommended for industry. Included are the new recommended footcandle levels; an explanation of the research program which developed the new recommendations; a discussion of the quality factors in plant lighting; and 10 illustrated examples of good lighting.

The Rubber Manufacturers Association, Inc., 444 Madison Ave., New York 22, N.Y.

New specifications for rubber cove base and flexible vinyl cove base, *available on request.*

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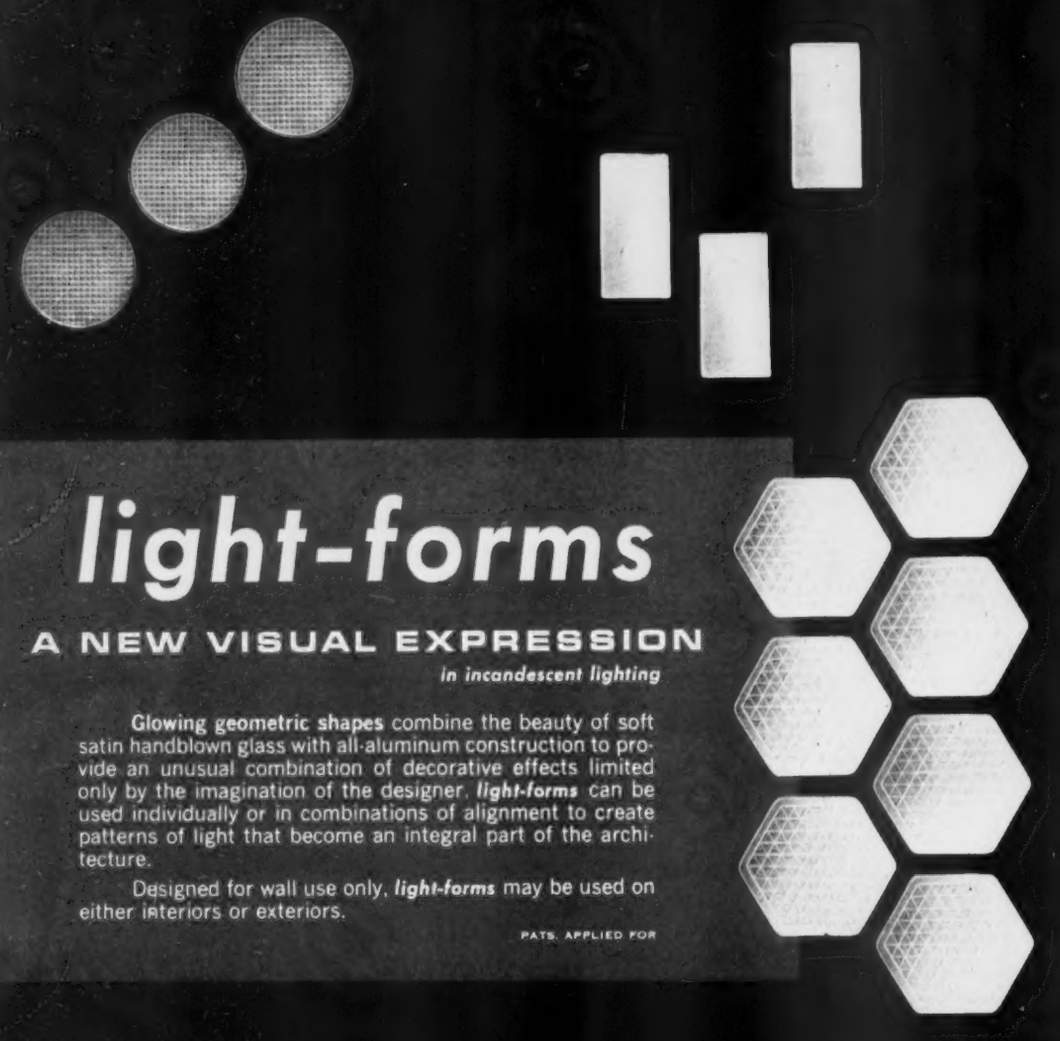

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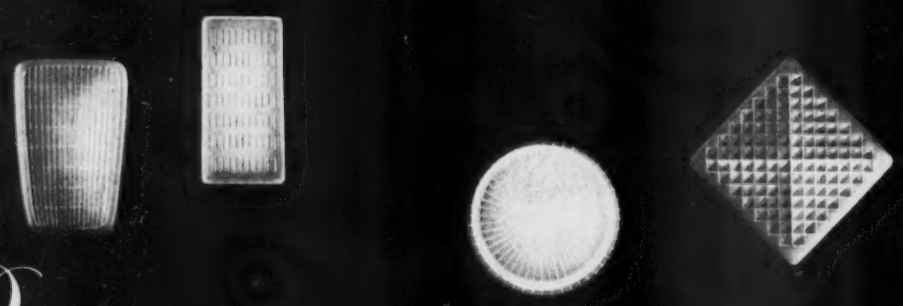

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BOOKS

Practical design of structural members *by Thomas Lucy. New York: F. W. Dodge Corporation, 1961. 432 pp. $12.00*

*by William A. Hoffberg AIA**

The purpose of the author was to prepare an office manual of structural design covering timber, steel and reinforced concrete in such a form that the designer would have reference tables directly related to explanatory notes and illustrative examples. No theory is developed. Concrete procedures apply the 1956 ACI Code on the basis of elastic design; the author is critical of the ultimate strength method which he feels will produce non-uniform safety factors.

More than one third of the volume is devoted to design notes introducing the tables and these generally consist of code summaries, practical suggestions and design examples. In addition to the basic structural elements such as slabs, joists, beams, columns and footings, there are sections on retaining walls, truss graphics, connections, wind and earthquake stresses, continuity and rigid frames.

It is a bit hazardous to undertake design beyond the detailed procedures given in codes, without confidence in the understanding of the theories involved. For those in the know, there are practical examples, based on the author's experience, which can be a helpful guide. For students, the tables are a convenient source for preliminary size assumptions of structural members in all materials, without recourse to separate handbooks; also as a cross-check in problem solving. Detailing information and sketches are quite useful as presented. Omission of welded plate girders and welded connections and the absence of an index are regrettable.

Marinas: *Recommendations for Design, Construction and Maintenance, second edition, by Charles A. Chaney. New York: National Association of Engine and Boat Manufacturers, 1961. 247 pp., illus. $7.50.*

This edition of *Marinas* is the most thorough and comprehensive item

Mr. Hoffberg, an architect and engineer, is Director of the New York Structural Institute.

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BOOKS

that has been written on the subject. Mr. Chaney has covered all phases of development of a marina from the feasibility analysis to operation and maintenance. Municipalities that have in mind the construction of a marina would be well advised to use this book as a guide in their discussions, especially as to the size, type of construction and siting.

It is especially pleasing that this edition stresses the sanitary sewage problem that is growing more important because of our efforts to avoid the pollution of our fresh water supply and our bathing beaches. Because of the great increase in the number of boats using our lakes, rivers and harbors, this problem is causing a great amount of concern and is the subject of study by many engineers. It can and will be solved through the cooperation of boat manufacturers, boat owners and marina operators.

While Mr. Chaney specifically covers marinas in his edition, it can be used as a guide to construction and maintenance of other types of waterfront installations where the same problems are encountered.

R. V. Southworth, PE
Henningson, Durham and Richardson,
Architects and Engineers,
Charlotte, N.C.

The New Architecture of Europe
by G. E. Kidder Smith. New York and Cleveland: World Publishing Co., 1961. 361 pp. Paperback $1.95, clothbound $4.00.

This illustrated guidebook ought to please everyone but the architects whose works appear in it. The names, addresses and telephone numbers are listed in an index, and as soon as the book finds its way into enough interested hands—as it will by next summer—these architects will wish they had never divulged their whereabouts. They would have insured themselves a more restful summer!

The guidebook pictures only those pertinent modern European buildings erected since World War II, so that it is in no way a history of modern architecture. It is subdivided into sections by country, each containing a line map referring to buildings shown by means of a common key number. Each building has its photograph and data as to location (town and street) and architect. There is also for every build-

(Continued on page 95)

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NAMES

FLORENCE SCHUST KNOLL, when in New York, usually spends her time in the Planning Unit of Knoll Associates on Park Avenue where her staff of interior planners may these days be found placing miniature partitions, flooring and furniture in mock-ups of what Mrs. Knoll explains will eventually be four floors of executive offices for Westinghouse Electric Corporation in the new Pan-Am Building.

Each office, corridor, fabric, desk and door is studied to scale by Mrs. Knoll, and by this method the Planning Unit can see how an interior plan looks *before* it is too late to do anything about it.

According to her staff, it was Mrs. Knoll who brought this "planning in miniature and to scale" to Knoll Associates, and it has since become a standard procedure in the interiors field. "Colors, fabrics and textures retain scale indefinitely," Mrs. Knoll explains.

This working in miniature is only one of the many design techniques which helped Florence Knoll reach the position she holds in the interiors field. Today, even architects with whom she has not worked hold her in great respect.

Whenever Mrs. Knoll was spotted in a corridor at the AIA Philadelphia Convention last spring, a crowd was seen to gather, and as she talked with groups of attentive architects you almost expected someone to ask her for an autograph.

But Florence Knoll, despite her influence on design of individual pieces of furniture, believes strongly that these should be designed not as independent entities, but that "designers must relate these objects to something." This thinking stems from her architectural background.

Orphaned when young, she attended Kingwood School at Cranbrook Academy of Art, where Eliel Saarinen took her under his wing, and his son, Eero, became her close friend.

The Saarinen family watched over her education at the Architectural Association in London and at Illinois Institute of Technology, where she studied under Mies van der Rohe and obtained her degree in architecture.

She then worked for a series of architects in the United States, during which time she met and married Hans G. Knoll, the founder of Knoll Associates. Mrs. Knoll joined that firm as partner and as head of the Knoll Planning Unit, which she conceived and still runs, mostly from her design research studio in Miami where she now spends much of her time.

During the past 15 years, with the help of such architects as Mies van der Rohe, Eero Saarinen, Marcel Breuer and many others, Mrs. Knoll established her firm as a leading designer and producer of contemporary furniture.

While Mrs. Knoll is not often inclined to talk about herself, her expressions on interior design and its role in architecture have burned the ears of some contemporaries. "The excesses," she says, "of many designers have justly earned them the architect's scorn. However, at the other extreme are the stark group who advocate space, one potted plant, one Mies chair. Obviously the solution lies in between."

Using what she defines as "in between," Florence Knoll has helped establish Knoll Associates as a world-wide organization, recognized as a symbol of the contemporary design movement. Today, Knoll Associates, Inc., together with its overseas affiliate, operate showrooms in eleven cities in the United States and in twenty-one foreign countries.

Florence Schust Knoll recently received the AIA Industrial Gold Medal Award in recognition of her ". . . leadership in developing furniture, textiles, and the accessories of interior design . . . in the service of contemporary architecture here and abroad."

Mrs. Knoll prefers to let things develop rather than talk of the future. No one outside Knoll Associates really knows what new designs in interior planning, furniture and fabrics are in the offing. But whatever the new trend, one may be sure that it will bear the imprint of her originality and experience.

CKR

BOOKS

(Continued from page 93)

ing a short text containing a description and an appraisal. An evaluation of the country's postwar progress in architecture opens each section.

The country-by-country portion is followed by a bibliography (including a very useful section on European architectural periodicals), an index to architects (*viz supra*), and an index by building types.

A total of 225 buildings is listed, and the following passage taken from the author's introduction gives an interesting hint as to the standards each had to pass:

"Merit alone is not sufficient for the inclusion of a building: it must have ideas and stimulation as well. In some cases a building that demonstrates fresh and constructive thinking, or explores a new facet of space, but suffers design weaknesses, has been chosen over a similar example of routine thought but superior execution.

"Some buildings that I personally do not particularly admire are included here. However, they are so important as indexes to trends or as outstanding examples of certain schools of architectural thought that it would be negligent to omit them."

Text, pictures, maps and covers are skillfully coordinated, and the book is, in fact, a very good looking one, as befits a work on architecture. A *Guide Michelin* in one pocket and a *Guide Kidder Smith* in the other should guarantee a stimulating tour.

SAK

The Future of Our Cities *by Robert A. Futterman. New York: Doubleday & Co., Inc, 1961. 360 pp. $4.95.*

This book is a study of the many and varied factors involved in the making of modern American cities.

The author, a young (33 years old) millionaire real-estate speculator, has devoted the first part of this work to an analysis of the various aspects affecting the making of the city in general.

Having presented these general factors in an over-all, mainly undetailed study, Futterman devotes the remaining (and major) portion of the book to a more detailed examination of the problems of seventeen major American urban areas.

(Continued on page 96)

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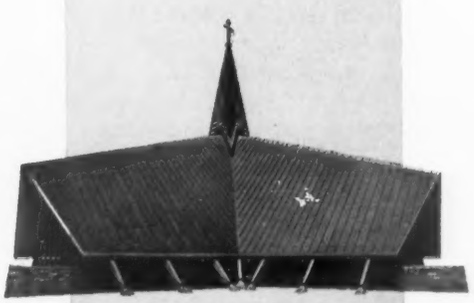

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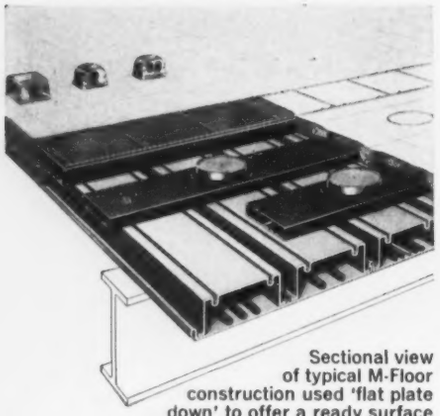

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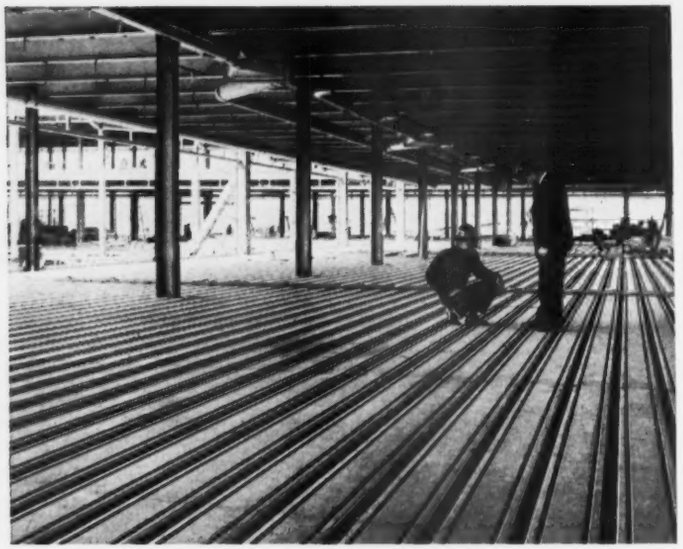

Mahon 3-in. beam depth M-Floors, during erection in eastern Pennsylvania project. General Contractor: McCloskey, Inc., Phila.

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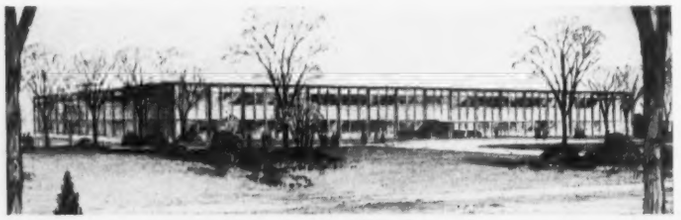

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BOOKS

(Continued from page 95)

The book is lively reading. Futterman has written this study with a good command of the *basic* problems involved in city growth and stagnation, but where problems call for a more detailed explanation he unfortunately refuses to provide it; therein lies the weakness of his book. Where facts cry out for even a small footnote, he gives none.

The title of this book is also somewhat misleading. The author appears to have devoted much more study to the *history* of cities and their present problems than he has to their future.

Those looking for a meaningful analysis of city planning in terms of the future had best be content with Lewis Mumford's recent *The City in History*, which gives a better projection for *future* cities in spite of its title. Readers will not find the Mumford touch or foresight in Futterman's work.

Futterman seems, however, to invite readers to take exception to some of his statements, and this adds to the liveliness of the work. As an example, he says: "it seems likely that future generations will point to Lincoln Center as one of the most abominable examples of bad site planning in the history of architecture . . . "

Again, on concluding his comments on the problems of New York City, Futterman says that "ultimately, leadership is the critical shortage. We wait impatiently for (another Robert Moses) . . . "

Victor Gruen FAIA perhaps summed the book up best in his Foreword: "As a planner and architect . . . I do not necessarily agree with all the findings and suggested avenues of procedure. But I salute the spirit of the book and I greet it wholeheartedly as a valuable ally in the task of re-creating our cities . . ."

We go along with Mr. Gruen.

CKR

films

Suburban living, *produced by the National Film Board of Canada and available through the International Film Bureau, Chicago, Ill.*

A scenic tour of suburban housing in a number of European cities, concentrating on low cost family projects.

EDITORIAL

FROM HERE TO UNIFORMITY? We have found it profitable from time to time to look about us and take stock of our relationship to Machine and his two unsilent offspring: Mass-production and Standardization.

We are not alone in this regard. We learned this to our satisfaction not long ago after we had sent out a series of questionnaires dealing with the possible merits of standardization as applied to color in architecture. The results of this survey were evaluated and appear elsewhere in this issue.

As we scrutinized the tenor of the responses (among which, we are glad to say, there were few that did not take a strong stand one way or the other) we began to speculate as to the possible outcome, were we to decide to expand this study from color alone to include other characteristics of architectural components, such as size, weight and choice of connective devices.

As we define our terms, we find that standardization can mean either a reduction of categories or the act of creating yardsticks. Both concepts are interrelated. If you create a yardstick, you tend to reduce categories. If you reduce categories, you will end up with yardsticks.

If standardization is to mean fewer lines of products, then a line of compromise will clearly appear between what the designer wants and what the manufacturer can reasonably be expected to provide. Where should this line be drawn, and to what point can standardization be expected to progress?

Working in its favor are certain unmistakable inducements, not the least of which is cost. As wages rise, both among workers who install products and workers who produce them, manufacturers will step up automated procedures; and automation + great variety are clearly contradictions in terms.

Two other factors supporting standardization are ease of specification and control of quality.

Another stems from what has come to be known as "environmental control," or the ability to be comfortable indoors, wherever we are, at whatever time of year. Thus, materials formerly limited to use solely in this or that climate will become usable in any climate. This, together with rapid dissemination of data on new products and new uses for them, will likewise serve to further standardization. Nor should "fashion" in architecture be discounted in this respect, if only for the duration of the fashion's cycle.

The more we standardize, the more we constrict choice; the more we constrict choice, the more we curtail originality and the likelihood of great revolutionary designs. But by thus increasing discipline, we may also reduce the incidence of bad work. Clichés, devoid of original thought, are natural by-products of abridged choice; but clichés could also work in favor of an acceptable average, without necessarily deterring the outstanding individual from bending any limitations to his will.

The rub is in the debatable idea that by reducing product choice one restricts variety; in fact, any such reduction can well be compensated for by stepping up the various ways in which this reduced arsenal can be combined and assembled.

Standardization cannot be imposed politically. But it can in a free economy grow as a result of other pressures, both industrial and popular. This is presently happening; and if it is not to lead to an excess of uniformity, it should be considered on its merits and made to serve good architecture.

A realistic appraisal of conditions today augurs even more standardization. Certainly not less. *SAK*

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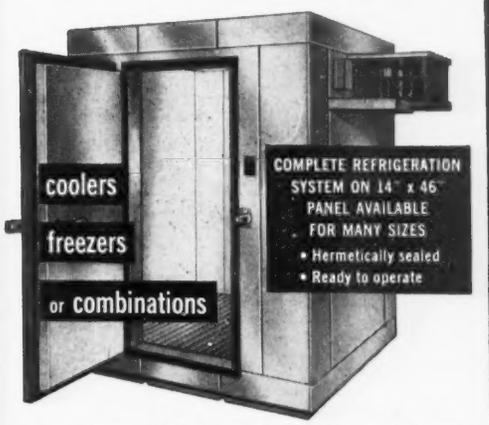

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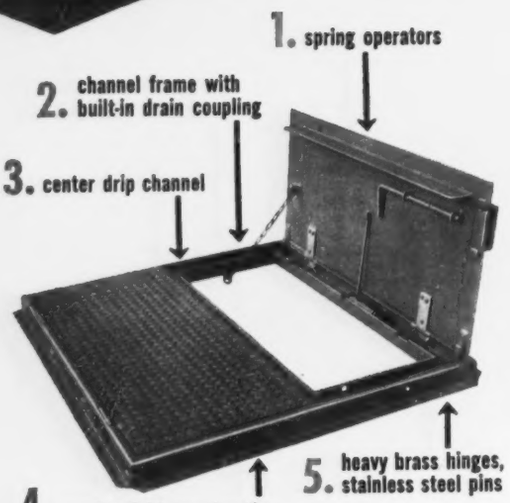
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21-23 AIA WESTERN MOUNTAIN REGION: 10th annual conference, at Reno, Nevada.

25-28 INDUSTRIAL BUILDING EXPOSITION & CONGRESS: New York Coliseum, New York City.

27-30 NEW YORK STATE ASSN. OF ARCHITECTS: annual meeting and convention, Saranac Inn, Upper Saranac Lake, N. Y.

28-30 AIA CENTRAL STATES REGIONAL CONFERENCE: St. Louis, Mo.

OCT 6 SEVENTH ARCHITECTS' TOUR OF JAPAN: 24-day tour. For further information contact: Kenneth M. Nishimoto, AIA, 263 South Los Robles Ave., Pasadena, Calif.

16-20 NATIONAL SAFETY COUNCIL: annual convention, Chicago, Ill.

18-22 CALIFORNIA COUNCIL AIA: annual convention, Coronado, Calif.

19-21 ARCHITECTURAL SOCIETY OF OHIO: 1961 convention, at the Statler Hilton Hotel, Cleveland, O.

NOV. 1-3 AMERICAN CONCRETE INSTITUTE: 14th regional meeting, Dinkler-Tutwiler Hotel, Birmingham, Ala.

2-4 CONSULTING ENGINEERS COUNCIL: board of directors meeting, Miami Beach, Fla.

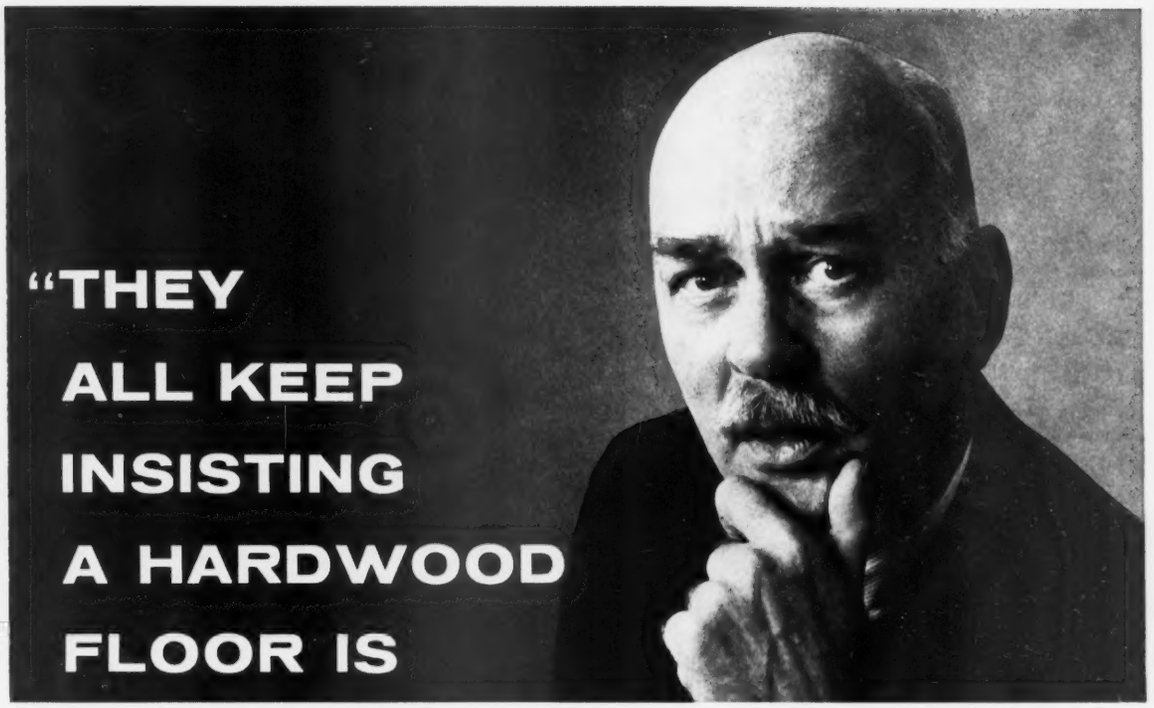
8-10 TEXAS SOCIETY OF ARCHITECTS CONFERENCE: Hotel Texas, Fort Worth, Tex.

15 AIA GULF STATES REGIONAL CONVENTION: Capitol House Hotel, Baton Rouge, La.

15 SOCIETY OF PLASTICS ENGINEERS: regional technical conference on "Vinyl plastics in the household," at the Statler Hilton Hotel, New York, N. Y.

16 NATIONAL ELECTRICAL MANUFACTURERS ASSOCIATION: 35th annual meeting, at the Plaza Hotel, New York, N.Y.

28-30 BUILDING RESEARCH INSTITUTE: fall conferences, Mayflower Hotel, Washington, D. C.



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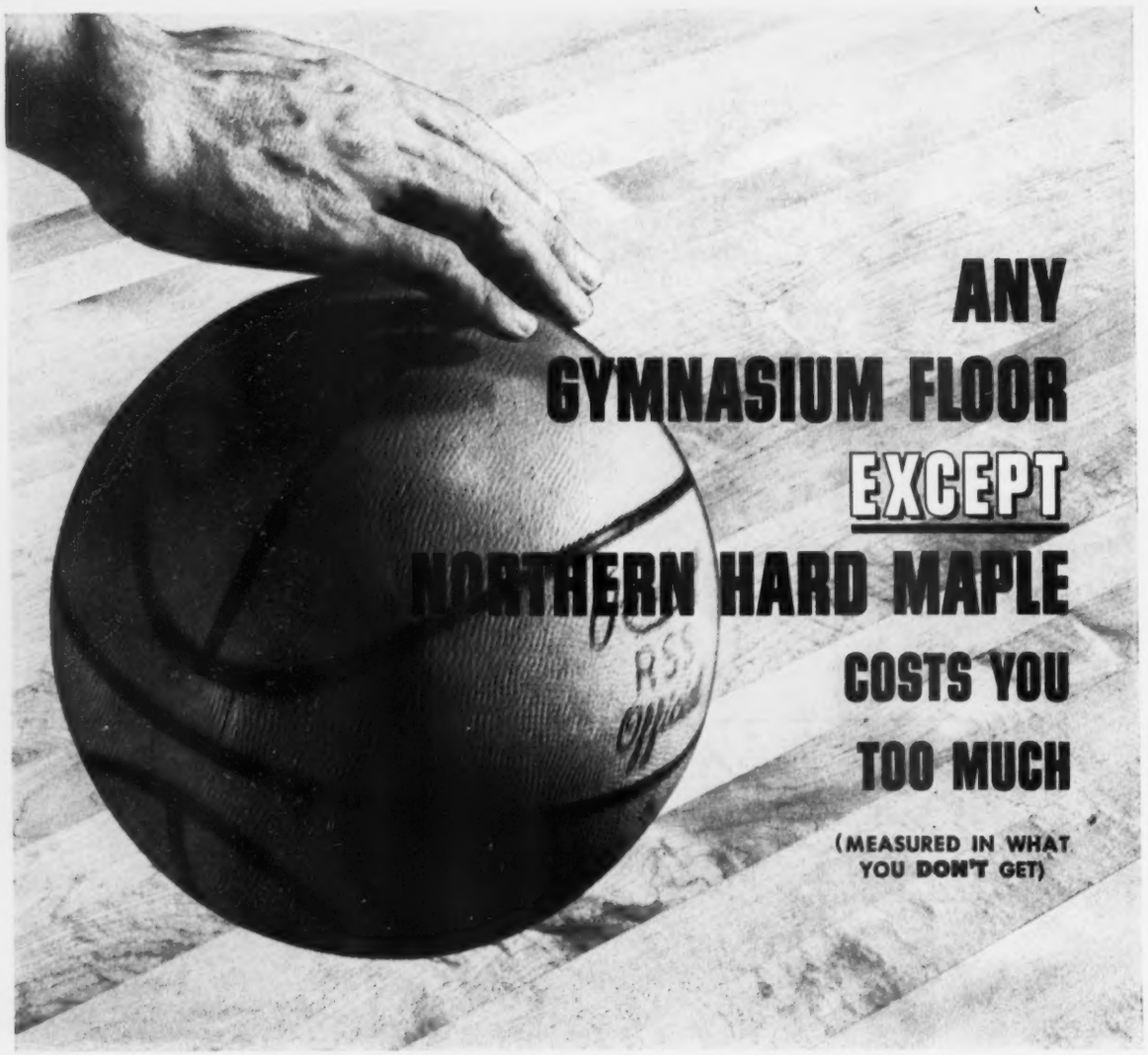

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